

MINING

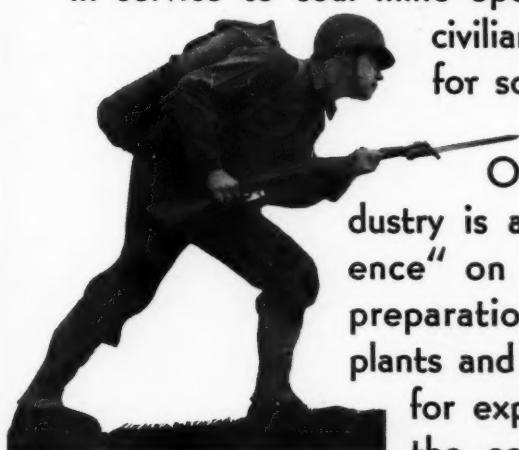
CONGRESS JOURNAL

MAY
1943



... OUR PLEDGE ...

Our pledge to our fighting men is our full efforts in service to coal mine operators that all essential civilian and war requirements for solid fuel may be met by quality coals.



Our contact with the industry is a constant "war conference" on meeting the changing preparation problems of present plants and providing new facilities for expanding production. All the energies and services of

our highly experienced personnel are enlisted. R & S stands squarely with the coal industry in staunch support of our boys "over there."

A
JOURNAL
for the
ENTIRE
MINING
INDUSTRY

Published
by the
AMERICAN
MINING
CONGRESS



ROBERTS and SCHAEFER CO.

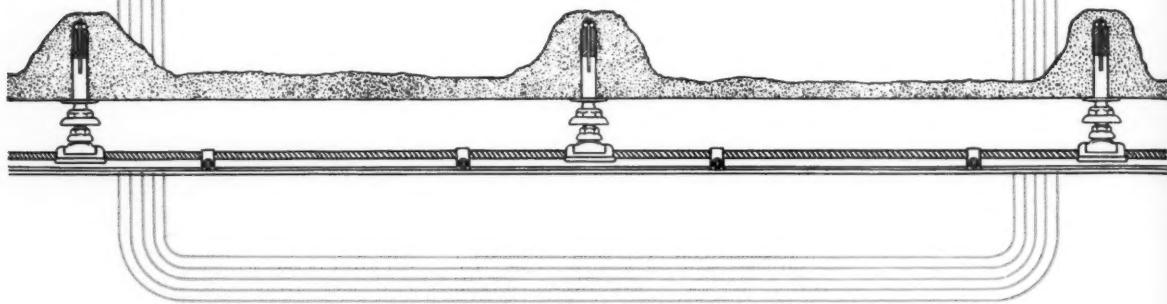
CHICAGO, ILLINOIS — WASHINGTON, D. C.

Designers and Builders of Tipples and Coal Cleaning Equipment



Let O-B Flexible Construction*

BRING THESE ADVANTAGES
TO YOUR MINE OVERHEAD SYSTEM



No "Hard" Spots In Wire

Minimizes harmful arcing and burning; stops collector hammering.

Greater Service Life

Less wear to trolley wire, overhead fittings and current collectors.

Longer Span Lengths—Fewer Hangers
Span lengths may be doubled cutting hanger installation costs in two.

Faster Haulage Speeds

Move more coal faster. With smooth underrun, trips can be speeded to meet today's increased production quotas without danger of dewaterment.

Less Maintenance

Trolley wire able to "run" and hold tensions longer, keep better alignment. Fewer materials to wear.

Permanent Undisturbed Feeder Taps

Eliminates frequent feeder taps to rigid trolley wire, often source of high resistance.

Lower Installation Costs

Half as many hangers to install. Except for extremely heavy loads, messenger-feeder cable supplies sufficient current eliminating separate feeder installation costs. If necessary, wide variety of fittings are available to install auxiliary feeder from same hangers.

Planning the rehabilitation of old overhead or the installation of new to serve extended workings? Then write today sending us plans of your proposed system. We'll be glad to show you how O-B Flexible Construction* can be incorporated into your design, putting these time and money saving advantages to work for you. No obligation, of course.

* A means of introducing resiliency into mine overhead construction. With this method, the trolley wire is freely suspended by staggered supports from a messenger-feeder cable, which, in turn, is rigidly attached to the mine roof. Wire alignment at curves may be handled by Combination Feeder and Trolley Wire Clamps.

2370-M

★ BUY ★ ★ ★ ★ ★
WAR BONDS
Ohio Brass
MANSFIELD, OHIO
CANADIAN OHIO BRASS CO., LTD., NIAGARA FALLS, ONT.

MINING

CONGRESS JOURNAL

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- "Sabotage"
- "Absenteeism"
- "Coal Famine"
- "Food Rationing"

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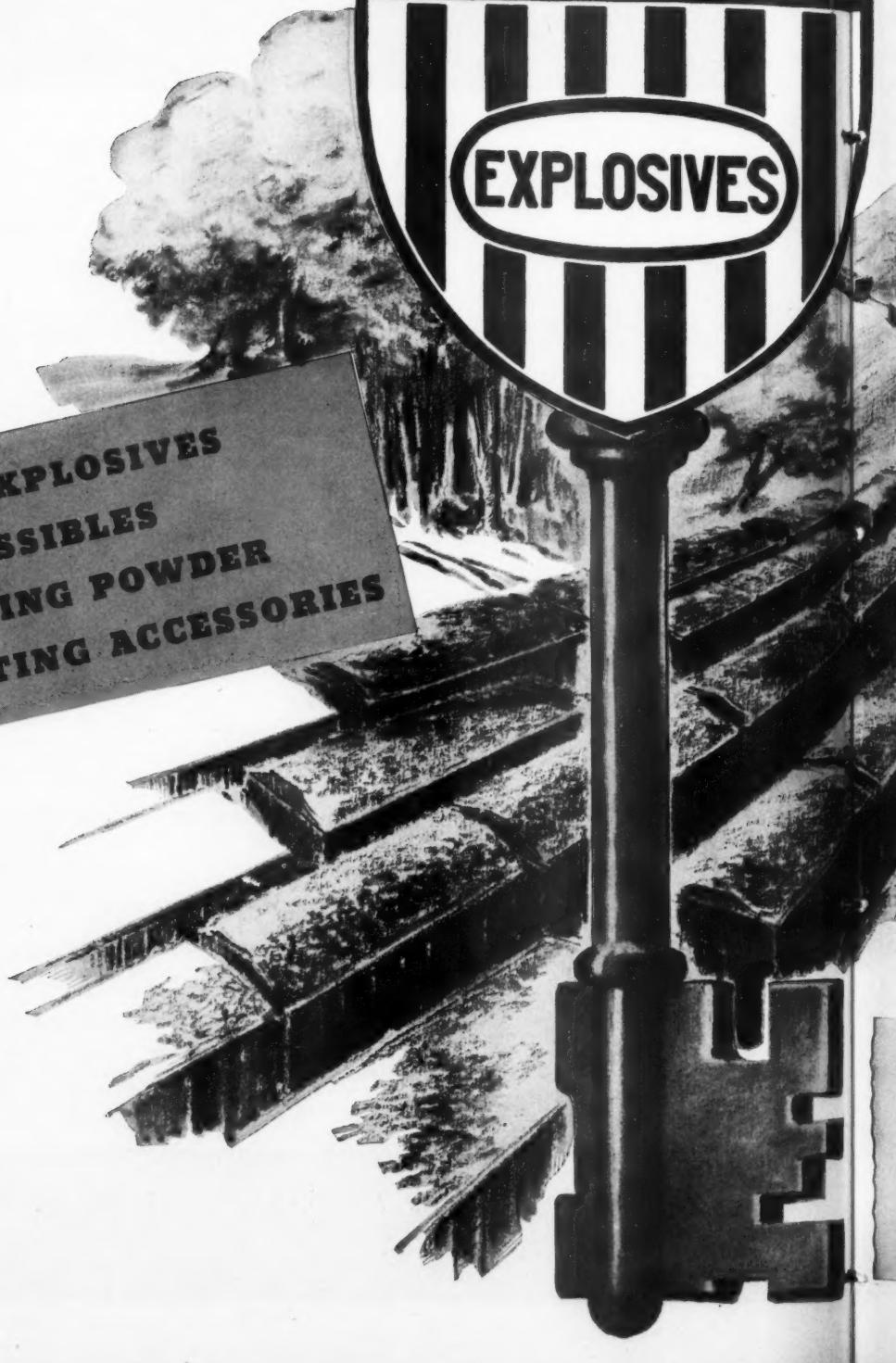
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The KEY...



★ HIGH EXPLOSIVES
★ PERMISSIBLES
★ BLASTING POWDER
★ BLASTING ACCESSORIES



to KING COAL'S WAREHOUSE



COAL had reigned supreme as a fuel for six hundred years before meeting any noticeable competition from other combustibles. Oddly enough as this competition developed, research has shown the chemical possibilities of King Coal and today he is conquering a new world. The chemist has found in this black material a thousand compounds, and by skillful manipulation has made many of these primary raw materials in the manufacturing chemical industry.

From it come the brilliant dyes that take away some of the drabness of life — Pharmaceuticals that alleviate pain and eradicate disease — Textile fibres to clothe us — Explosives to protect our land and defeat our enemies. It will be the future source of our modern motor fuels. A myriad of yet unknown products from coal will issue from our chemical laboratories and find their place in our coming civilization. King Coal has a new world at his feet.

Industrial explosives are the keys to unlock these riches from King Coal's storehouse. The correct explosives, plus good blasting practice, are the important steps in the processes to synthesize all these materials. AMERICAN explosives fit well into this picture because they are the products of intensive chemical research, proper chemical control, unremitting and thorough inspection at every step in their manufacture. To consult in the selection of the proper explosive and its use, capable field engineers are available at your call.

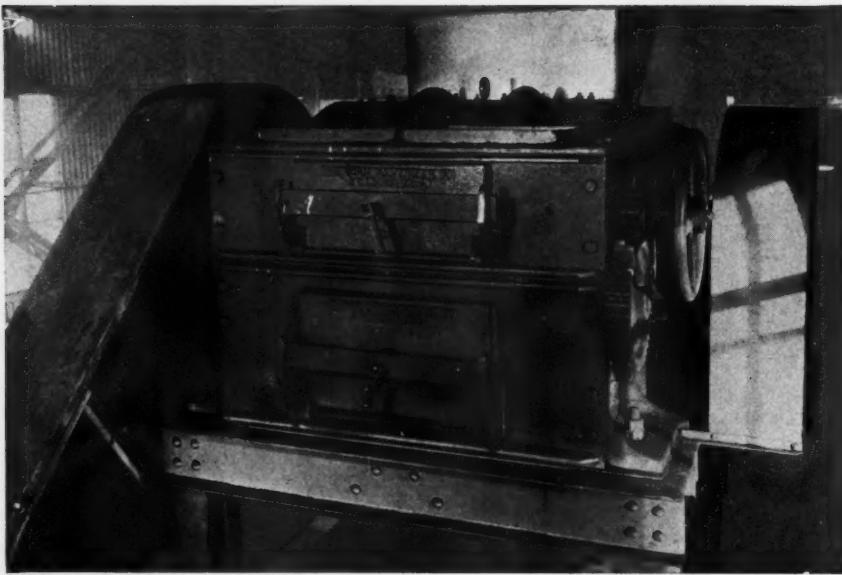
American Cyanamid & Chemical Corporation



30 ROCKEFELLER PLAZA • NEW YORK, N. Y.

EXPLOSIVES DEPARTMENT

SALES OFFICES: Pittsburgh, Pa. Bluefield, West Va. Scranton, Pa. St. Louis, Mo. Chicago, Ill.
Pottsville, Pa. Hazleton, Pa. Maynard, Mass.



★ This reversible Manganese Steel Shredder Ring is a patented feature found only in American Rolling Ring Crushers. It splits the coal instead of crushing it, thereby assuring a uniform size of crushed coal. An adjustable grinding plate makes it possible to secure properly sized coal for either stoker or pulverized coal burning. The crusher can be adjusted to make either a maximum or minimum amount of fines.

PRODUCING STOKER COAL SIZES IS OUR JOB . . .

QUICK FACTS ABOUT AMERICAN RING CRUSHER'S MONEY SAVING ABILITY

- Because fines are reduced to a minimum by the action of our patented Manganese Steel Shredder Rings—which split the coal instead of crushing it.
- Because power requirements are reduced by this splitting action to a remarkably low figure. American Ring Crushers can be relied upon to reduce bituminous coal from lump to stoker size for less than one cent per ton, *including all costs*.
- The American Rolling Ring Crusher embodies a number of original features in its operating mechanism, which makes it the outstanding Coal Crusher. Simplicity and accessibility were the guiding factors in the American Ring design. These crushers are built in various sizes and types.
- Find out how you can use it and save more money. Write us regarding your coal sizing problems. Our engineers will be glad to tell you the complete facts about this crusher and how its engineering features work to your benefit. Names and addresses of many prominent users furnished promptly on request.

AMERICAN RING COAL CRUSHERS NOT ONLY HANDLE ALL COAL SIZES *but*

when it comes down to 1" or minus domestic stoker coal, American Ring Crushers will do the best job on the basis that it will produce less dust or fines.

READ WHAT USERS SAY

ILLINOIS COAL OPERATOR:

"We are happy to state that the two units we have in service are performing satisfactorily. We have an old American Ring No. 30 which is still in use crushing gob and refuse, a new type A. C. 3-A used for making domestic stoker coal, and also a laboratory crusher."

MIDLAND ELECTRIC COAL CORPORATION:

"It has proved an economical and flexible unit. We have been able, by adjustments to vary the product from 35% minus $\frac{1}{4}$ inch to 14% minus $\frac{1}{4}$ inch, in a $1\frac{1}{4}$ inch crushed coal."

ANOTHER ILLINOIS PRODUCER:

"We are using two of your AC3-A American Rolling Ring Coal Crushers for producing domestic stoker product. These two Crushers, at different mines, are crushing $2 \times 1\frac{1}{2}$ " and $1\frac{1}{2} \times \frac{3}{4}$ " to a product $\frac{3}{4}$ " and under at the rate of approximately 235 t.p.h., and also reducing $2 \times 5/16$ " to a product $5/16$ " and under at the rate of 150 t.p.h. They are driven by 125-HP. motors. These crushers are more than fulfilling our expectations both in tonnage produced and in quality results in crushing to size. As a good capital investment they have our full endorsement."

AMERICAN PULVERIZER COMPANY

ORIGINATORS AND MANUFACTURERS OF RING CRUSHERS AND PULVERIZERS

1019 MACKLIND AVENUE
ST. LOUIS, MISSOURI



*half a carload at
your finger tip with*
Rototrol

Today's open pit mining production, accelerated by the demands of a nation at war, has necessitated broader use of large-capacity shovels, drag lines, and skip hoists. Accurate, sensitive control at all stages of the work cycle is necessary in the larger capacities. Conventional control, perhaps good enough in the smaller sizes, is entirely inadequate in the larger sizes. Smooth operation is particularly important in larger sizes because of the larger horsepowers and torques involved. Jerky operation produces heavy stresses in supporting members, cables, and other parts.

Smooth, automatic acceleration and deceleration is made available by the Rototrol. This Westinghouse development was first introduced fifteen years ago to control the feed of welding rod for automatic welding. Since then its principles of automatic control have been

proved on a diversity of applications. These include high-speed elevators, paper mill machinery and machine tools. To this list can now be added mining machinery—not only for surface operations, for hoisting, and for underground equipment. Huge half carload bites are moved and controlled smoothly and positively by finger-tip electric control.

The savings in operating and repair expense will more than pay for the Rototrol. In addition more tonnage will result due to finger-tip control and fewer outages for repairs. Your nearest Westinghouse representative will be glad to show you how the Rototrol fills your requirements.

J-94555

PLANTS IN 25 CITIES...



OFFICES EVERYWHERE

Westinghouse

12 things to do

A coal cutter that lasts longer defers the drain on precious materials needed badly in some tank or ship or gun yet to be built for some battle yet to be won. These maintenance suggestions if followed religiously will help to keep your coal cutters cutting and your production at peak.

START a regular lubrication program and stick to it!

- 1 Appoint men to job of inspecting and lubricating all machines.
- 2 Follow instructions shown on lubrication plates.
- 3 Use the detailed lubrication chart that is furnished with each machine.
- 4 Keep the program simplified. If it is too intricate, it will not be carried out properly.

CHECK the cutter bar and cutter bits.

- 1 Study the face of the kerf—that's where most troubles originate.
- 2 Be sure the kerf is smooth—a ridged kerf increases power consumption.
- 3 See that clearance between cutter bar and outside bits is at least $\frac{7}{8}$ ".
- 4 Bits should be set out to $1\frac{3}{4}$ ".
- 5 Dull cutter bits are expensive to operate and do not produce as much as sharp bits will.

DON'T sum up a shortwall in fast feed.

- 1 Average load in making a summing cut in fast feed is 5 times greater than the average cutting load.
- 2 For safety, remember that handling speed is 15 times as fast as the cutting feed.

USE proper size feed ropes—give them regular care and lubrication.

- 1 The feed rope serves as a margin of safety—rope trouble means excessive wear at some other point in the machine.
- 2 If rope breaks, check the cutter bar clearance and also check the condition of the cutter bits.

MAKE cable splices tight and safe.

- 1 Using temporary splices should be an emergency practice only.
- 2 Poor splices can cause blowups, breakdowns and loss of power.
- 3 Have all temporary splices properly soldered and jackets repaired as soon as possible.

SULLIVAN

Modern Machines for Every Mining Method

to keep your Coal Cutters

Cutting

INSPECT ... Make an "all-out" inspection of your machines at regular intervals.

- 1 Clean and check all bearings, gears and pinions.
- 2 Check all shafts for misalignment.

KEEP your machines clean.

- 1 Clean machines will operate more smoothly, do more work and will cost less to run.
- 2 Dirt, dust and oil around a machine are a hazard to safety and hinder efficient performance.

CHECK the cutter chain lacing on your machines.

- 1 Proper lacing will keep power costs down.
- 2 Select the cutter chain lacing that will serve best on your machine. A lacing suitable for a slow speed shortwall will not work well on a modern, track-type cutting machine.

HAVE a uniform policy for replacing worn parts.

- 1 When ordering repair parts, give manufacturer all the information you can.
- 2 Part number, part name and shop number of the machine are necessary.
- 3 Complete information will enable the manufacturer to supply you quickly and satisfactorily.

CHECK electrical motors and controls regularly.

- 1 Coal cutters operate under conditions that place strain on electric equipment.
- 2 Dirt and dust filter into the motor, cutting down its efficiency.
- 3 Check the oil seals frequently and blow out dirt by using compressed air whenever possible.
- 4 Armature should be removed once each year and thoroughly cleaned.
- 5 Keep commutator clean to eliminate excessive brush wear.

KEEP Automatic-type electrical controls clean.

- 1 Inspect regularly, checking all springs.
- 2 Never use emery on contact points, clean with file or sandpaper.
- 3 Check all terminal nuts and bolts. This is a simple precaution that will save time and trouble.

REMEMBER Coal makes the heat that produces the weapons that arm the Americans who are fighting our enemy.

Uncle Sam needs all the coal you can produce ... and all the metal you can get along without. Produce the one ... save the other. This is your job in this war.

SULLIVAN MACHINERY COMPANY, MICHIGAN CITY, INDIANA
Canadian Sullivan Machinery Co., Ltd., Dundas, Ont.

SALES OFFICES

Birmingham, Ala.
Butte, Mont.
Chicago, Ill.
Dallas, Texas
Denver, Colo.
El Paso, Texas
Huntington, W. Va.

Knoxville, Tenn.
Middlesboro, Ky.
New York, N. Y.
Pittsburgh, Pa.
San Diego, Calif.
San Francisco, Calif.
Salt Lake City, Utah

Scranton, Pa.
St. Louis, Mo.
Johannesburg,
So. Africa
Sydney, Australia
Grantham, Lincs,
England

PRODUCTS

COAL MINING MACHINES • SCRAPER HAULERS • ROCK LOADERS • HOISTS • CAR PULLERS • AIR COMPRESSORS
COAL DRILLS • ROCK DRILLS • CUTTER BIT SHARPENERS and HEATERS • CORE DRILLS and CORE DRILL CONTRACTING

THINGS ARE



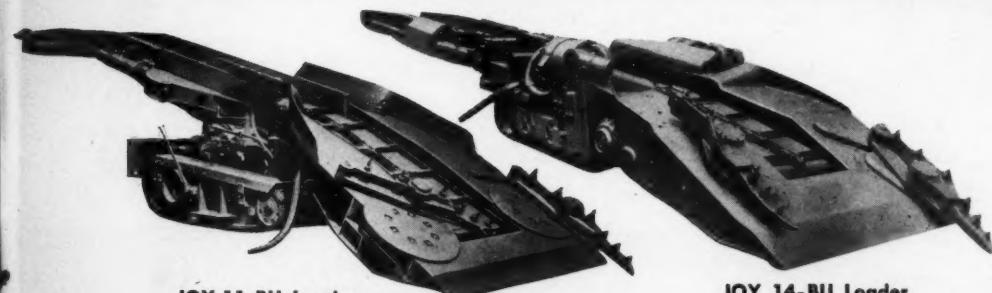
U.S. Navy Official Photo,
through Underwood & Underwood

Things are moving today—the methods of yesterday are in the discard for good. Coal is Industry's Ammunition—boost your output by installing Joy Mechanized Equipment. The experience and advice of Joy Engineers are available at your request.



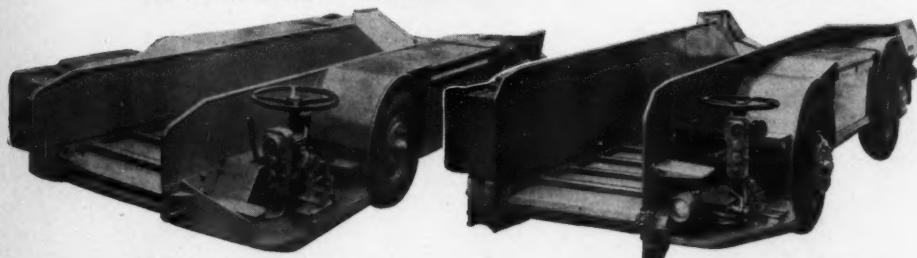
...AND JOY IS

MOVING . . .



JOY 11-BU Loader

JOY 14-BU Loader



JOY 32" Shuttle Car

JOY 42" Shuttle Car

U S Army Signal Corps Photo,
through Underwood & Underwood



MOVING COAL

JOY MANUFACTURING COMPANY
FRANKLIN, PA.

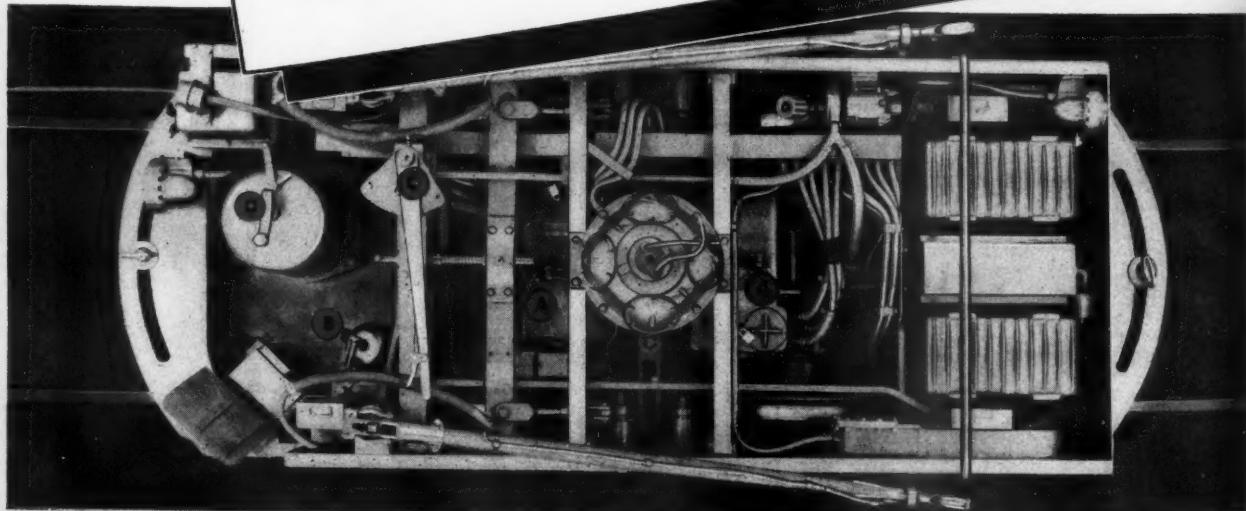
PULLING POWER



G-E 8-TON "SEALED-EQUIPPED" MINING LOCOMOTIVE

- A. Motors centrally hung for good balance
- B. Ample space for operator
- C. Quick-acting lever brake, easily adjusted

- D. One-hand reversing and plugging controller—readily accessible for inspection
- E. Side-equalized coil-spring suspension—good balance—stays on the track



to Speed up

NEW BITUMINOUS TONNAGE

Facing the necessity of opening new bituminous mines quickly and safely with limited man power, you'll find General Electric's popular 8-ton "sealed-equipped" gathering locomotive offers definite advantages in:

Continuous "On Track" Performance

Security in Gassy Areas

Low Servicing and Maintenance Costs

This locomotive is of explosion-proof construction. Its centrally hung motors and side-equalized coil-spring suspension produce fine balance, eliminate teetering, track pounding, derailments.

The unit's quick-acting lever-brake and single-hand controller mean faster, more accurate spotting of cars and locomotive, give added assurance of a continuous supply of empty cars at the mine face.

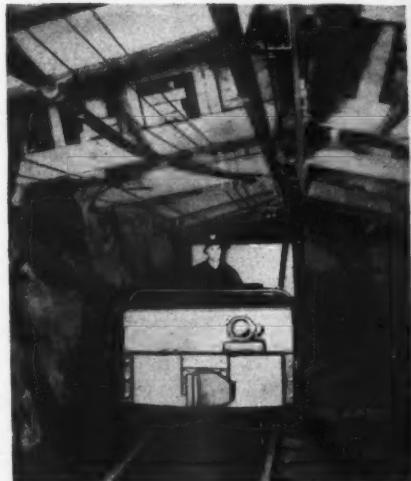
The long service life built into bearings, motors, controller, and cable-reel equipment results in lower maintenance cost and less time out for servicing.

Performance? Repeat orders from three large operators for 97 sealed-equipped locomotives tell the story. So does the preference of the entire industry, which is installing almost as many locomotives of this type as all others combined. *General Electric Co., Schenectady, N. Y.*

WHATEVER YOUR CONDITIONS
THERE'S A G-E LOCOMOTIVE TO MEET THEM



G-E 8-ton unit with electric cable reel



G-E 8-ton mine-type trolley locomotive

Standard G-E "sealed-equipped" 8-ton unit: 4000-lb drawbar pull; height 48-in.; width 67 in.; wheelbase 30 in.

GENERAL  **ELECTRIC**

657-17-204

FIVE SHIPS FOR ORDINARY WIRE

ONLY 1/5 THE SHIPPING SPACE

Laytex A
REG. U.S. PAT. OFF.



U. S. Rubber Laytex Army Assault Wire requires only one-fifth the shipping space of ordinary communication wire...releases four times the room for men, material, food for overseas.

Light, strong and plenty tough, Laytex is the most flexible of all insulation for electrical conductors. It is waterproof, resists wide-range temperature changes...and will not shatter under concussion. Conductors are perfectly

centered...because the unique Laytex Process applies the purified insulation in liquid form.

Laytex Assault Wire meets every basic requirement of the Armed Forces. It weighs less than 30 pounds per mile, twisted pair; has a breaking strength of 50 pounds per conductor; a talking distance of five miles. Millions of feet of Laytex Assault Wire are now on active duty wherever American Armies are in the field.

UNITED STATES R

1230 Sixth Ave

Rock

RY WIRE

ONE SHIP FOR
U. S. LAYTEX ASSAULT WIRE

G SPACE REQUIRED FOR
ASSAULT WIRE



Laytex
REG. U. S. PAT. OFF.

ASSAULT WIRE MEETS EVERY
BASIC MILITARY REQUIREMENT

Rockefeller Center • New York

S RUBBER COMPANY

S-s-s-t!—gotta minute Mister?



★ We know you're busy but listen. Some day the sweetest sight to your eyes will be the constant even flow of S-D "Automatic" trains of coal coming out of your mine—the answer to top tonnage.

Now, don't just take a glance, but study carefully, the illustrations in this ad from top to bottom. Not particularly the cars but their action. First, let's look at top illustration. Now, bear in mind that this string of S-D "Automatic" cars never stops rolling after it leaves the mine until the cars return empty; and they'll pass another trip on their return to the mine.

Next, you see how S-D 1-2-3 "Automatics" lay the coal down gently, while in motion, one door at a time, without breaking the coal. This action is taking place in the third illustration—a full train in motion, discharging its coal—20 car loads a minute. The fourth illustration shows how your bin can be filled level full (possible only with "Automatics") when, for any reason, screening or cleaning plant is down.

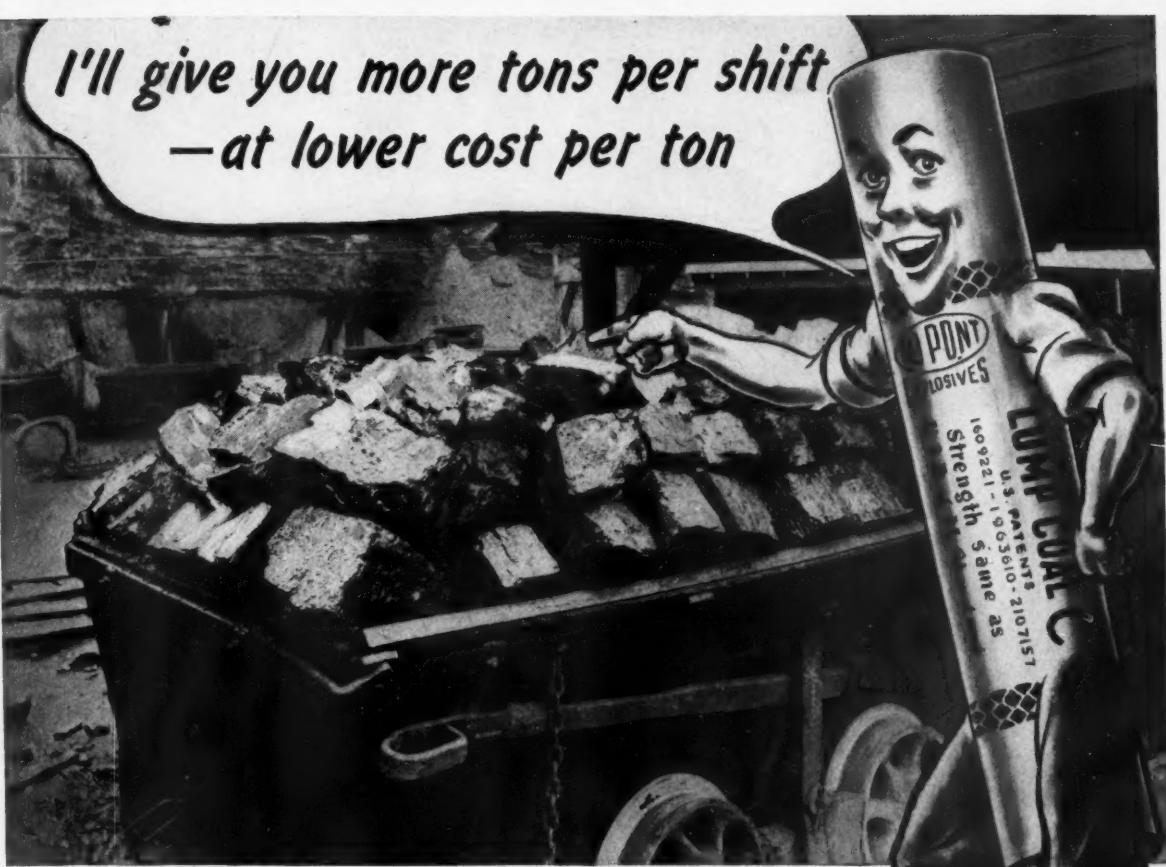
Here you have the simple story of the most sensible guarantee for top production, minimum man power, at the least possible cost per ton. Reduced costs are certain. So certain, that we are willing to rent S-D "Automatics" to you on a basis so liberal that your cash savings will more than pay the rentals. After these savings have been proved, you may purchase the cars if you wish. You can't lose. Why hesitate? Write for full details now.

Sanford-Day Iron Works

KNOXVILLE

TENNESSEE

*I'll give you more tons per shift
—at lower cost per ton*



More tons of coal per shift, at lower cost per ton is always good business, but today it's more than that: It's the way every mine can best do its share to produce the 665,000,000 tons America *must* have this year.

To help do that job Du Pont offers "Lump Coal" C—the dynamite that today is the most used of all permissible explosives in U. S. coal mines.

The action of "Lump Coal" C is the nearest approach to that of black powder yet achieved in a permissible. It's a slow, heaving action that rolls the coal forward, away from the face, into position where mechanical loaders can get it easily.

When properly loaded, "Lump Coal" C shears ribs clean, practically eliminating tight or hanging shots—and its remarkable spreading action frequently means you can bring down a face with fewer drill holes—saving time and explosives. In addition, an excellent grade of lump is obtainable when wanted.

This outstanding permissible is geared to today's demand for the fast, easy loading that gives greater tonnage and lower costs. For further information, write or call: E. I. du Pont de Nemours & Co. (Inc.), Explosives Department, Wilmington, Delaware.

SAVE FATS FOR EXPLOSIVES—Fats are urgently needed for making glycerin—an essential ingredient in the production of high explosives. Urge housewives to aid the war effort by taking waste fats to their butcher.

TIPS FOR BETTER BLASTING
Sometimes it's the obvious things that are neglected. Take bug dusting for example. We all know it's necessary—that when cuttings are left in the undercut no explosive can do its job properly. Yet this is often overlooked. That's why we urge every superintendent, foreman, and preparation engineer to see that bug dust is out before shooting.



"LUMP COAL" C



Save to Win
with these four simple rules
of battery care:

- 1 Keep adding approved water at regular intervals. Most local water is safe. Ask us if yours is safe.
- 2 Keep the top of the battery and battery container clean and dry at all times. This will assure maximum protection of the inner parts.
- 3 Keep the battery fully charged—but avoid excessive over-charge. A storage battery will last longer when charged at its proper voltage.
- 4 Record water additions, voltage, and gravity readings. Don't trust your memory. Write down a complete record of your battery's life history. Compare readings.

If you wish more detailed information, or have a special battery maintenance problem, don't hesitate to write to Exide. We want you to get the long-life built into every Exide Battery. Ask for booklet Form 1982.

...is a vital principle of war-time mining!

Conservation of materials is no new story to American miners. With thrift and efficiency they have always planned for conservation.

They've squeezed the last ounce of use out of materials and equipment in their care . . . and today, that need is intensified.

One helpful principle to follow is that of "Buy to Last—Save to Win." Buy quality products and equipment, then care for it to avoid needless replacement. That conserves raw materials, labor, and space in factories. It frees these productive elements for essential war production.

THE ELECTRIC STORAGE BATTERY CO., Philadelphia
Exide Batteries of Canada, Limited, Toronto

Exide
IRONCLAD
BATTERIES



WE'RE GIVING OUR BOYS A FIGHTING CHANCE



The men and women of MARION are taking this war seriously. They are giving everything they've got to building MARIONS for war work at home and behind the world's many fighting fronts. They are keeping cranes rolling off the assembly lines so that more ships can

be built and loaded. They have earned the coveted Maritime Award and Victory Fleet flag. They are investing 10 per cent and more of their pay checks in war bonds month after month. This is how the men and women of MARION are helping to win this war for they, too, have sons, brothers and husbands in the Armed Services to whom they owe a fighting chance.

THE MARION STEAM SHOVEL COMPANY, Marion, Ohio, U. S. A.

MARION

SHOVELS - DRAGONS - CLAM SHELLS
CRANES - PORTAL CRANES - WALKERS



WORKING FOR VICTORY: DIGGING — Coal • Magnesium
Iron Ore • Copper Ore • Bauxite • Manganese • Nickel
Molybdenum • Sand & Gravel • Clay
MATERIAL HANDLING — Shipbuilding and Cargo Loading
BUILDING — Airports, Ordnance Plants, Arsenals, Army
Comps., Marine Bases, etc.

ROBINS

CONVEYING BELT COMPANY

changes its name!

For nearly half a century, we've borne this fine old name . . . borne it proudly . . . made it the synonym and symbol of quality not only here but in many other parts of the world. Now we lay it aside tenderly . . . not entombed but enshrined.

In its place, we adopt a new name . . . a name more truly definitive of the range of our products, the extent of our services . . . services to those who mine coal, ore, minerals, sand, gravel . . . services to those who use these elements to manufacture the implements of industry which make this country great and strong and victorious. To these people, these corporations, ROBINS has long been known and honored for its pioneering spirit . . . its daring to try the seemingly impossible in order to advance the industrial economy of the nation and the world.

During the first decade of its existence, ROBINS conceived and introduced 41 innovations in the field of materials handling methods and machinery.

In the years since then, other equally radical and constructive advancements have been initiated by ROBINS. Because they are so wide in variety, in utility and in application, we believe it advisable to adopt a name more encompassing, a name less restrictive in its connotations than Robins Conveying Belt Co.

And now — without any change in directorship, management or corporate structure, we become: ROBINS CONVEYORS INCORPORATED.

FOR MATERIAL AID
IN MATERIALS HANDLING . . . **It's ROBINS**

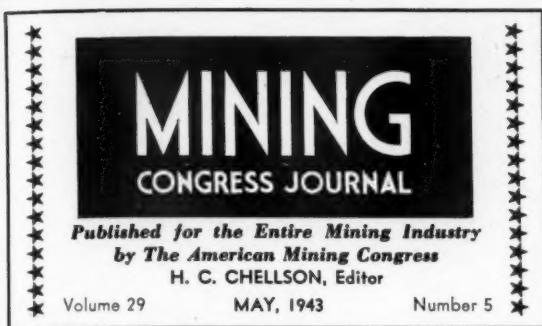
ROBINS created

- THE FIRST belt made especially for conveying materials
- THE FIRST troughed belt conveyor
- THE FIRST belt with a thick cover at the center
- THE FIRST splice made with a portable vulcanizer
- THE FIRST single-plane idler
- THE FIRST stepped-ply belt
- THE FIRST protected screw takeup
- THE FIRST self-reversing tripper
- THE FIRST belt conveyor for handling stone
- THE FIRST belt conveyor for carrying coal
- THE FIRST belt conveyor for sand and gravel
- THE FIRST conveyor storage system
- THE FIRST picking belt
- THE FIRST belt conveyor in a gas works
- THE FIRST belt conveyor that ever handled copper ore
- THE FIRST mechanical ore bedding system
- THE FIRST belt system for loading colliers
- THE FIRST conveyor for handling excavated material
- THE FIRST system of belt conveyors to handle mixed concrete
- THE FIRST tandem-driven belt conveyor
- THE FIRST tripper with a side-discharge belt
- THE FIRST conveyor belt 96 inches wide—the widest ever built
- THE FIRST conveyor on a dredge
- THE FIRST counter-weighted hoisting tower
- THE FIRST "Ward Leonard System" hoisting tower
- THE FIRST hydraulic hoisting tower
- THE FIRST power-saving idler
- THE FIRST belt-unloading system for boats
- THE FIRST travelling bridge using a belt for stocking and a bucket for reclaiming
- THE FIRST airplane-tripper
- THE FIRST belt feeder
- THE FIRST ship loading plant with tripper and loading boom
- THE FIRST conveyor in a tunnel under a storage pile
- THE FIRST rotary grizzly
- THE FIRST rotary stone grizzly
- THE FIRST training return idler
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Labor and the Administration Learn a Lesson

FOR MOST of the past 10 years "reform" has been the daily lesson preached from the White House, echoed in the halls of Congress and pushed by ambitious left wingers. American labor has grown strong with this type of philosophy; so strong in fact as to believe it occupied the driver's seat on the New Deal band wagon and could dictate how this country should serve labor.

Congress under the approving eye of the President has given labor advantages, legal and economic, but this trend up to the time of Pearl Harbor, had largely ignored the long range effect on the American economy and the public in general. This apparently was of little concern so long as New Deal politicians and left wing elements could perpetuate themselves in office.

Not so very long ago, there was but one large labor federation of industrial workers in this country, whereas today there are three such organizations. Two are the result of seeds of dissension sown among laboring groups as their respective leaders sought more power under the New Deal umbrella. The rank and file of these organizations on numerous occasions have found themselves helpless to prevent their leaders from shocking the nation by acts of incredible racketeering, insincerity and an appalling lack of good judgment. This trend has been unfortunate for the American workmen, and it has produced strong public opinion against the growing unwieldy power of labor leaders.

In spite of public opinion, even in spite of war, the rising tide of power of labor unions has not diminished. For this country to be assured of uninterrupted war production, it obtained a "no strike" pledge from all labor unions for the duration after some concessions were granted. Unfortunately in some cases this pledge has been honored more in its violation than its observance. The Bureau of Labor Statistics has reported 210 new strikes to have been started during February against 195 in January. Meanwhile, public opinion has been getting thoroughly fed up with the recklessness of certain factions of labor and their failure to demonstrate a capacity for assuming important responsibilities.

Our government has been trying to solve many grave problems in fighting a global war, and to

prevent the rising tide of inflation it was forced to keep worker's earnings in line with the 15 percent increase specified by the "Little Steel" formula.

The leaders of the United Mine Workers of America openly demonstrated their objection to this government action by demanding a two dollar a day wage increase in a new contract with coal operators. In the face of government policy and the standards fixed by the Office of Economic Stabilization, coal mine operators were prohibited from making any wage increase. The channels of government mediation for settlement of the dispute were open to the miners' union. Asserting that the War Labor Board was prejudiced against his union, however, John L. Lewis chose to demonstrate his power to virtually cripple the war program of 135,000,000 Americans by refusing to permit his case to be presented to the Board for settlement. He aroused the anger of the nation, and what our men in uniform think of his attitude and actions is unprintable. He forced the rank and file of his union into bewilderment and apprehension. They knew how vital the coal they mine is to their country at war, and that any stoppage because of technicalities in wage negotiation would be disastrous, yet their leader said they would not trespass on company property after April 30 without a new contract.

Labor stoppages occurred at the coal mines before April 30, coal production declined, and our enemies shouted with joy. Mr. Lewis' adamant position in face of the deadline moved President Roosevelt to place the vital coal mines in the hands of the government on May 1. In a radio address to the nation the President said, "I want to make it clear that every American miner who has stopped mining coal—no matter how sincere his motives, no matter how legitimate he may believe his grievances to be—every idle miner directly and individually is obstructing our war effort."

MEANWHILE other labor unions are watching this tragedy with expectation. Any concession granted John Lewis will be a signal for other pressure groups to rush in and demand higher wages and prices, thereby giving the wedge of inflation a resounding wallop and driving it deep into our war effort.

After many years, the administration is beginning to learn a lesson from its experience of permitting left-wing thinkers to encourage featherbedding policies for labor. Unfortunately its enlightenment comes at a time when our nation struggles for its very life. The crossroads have at last been reached where the President has stopped the wagon and, it is hoped, is prepared to ditch his left-wing advisors and guide the labor movement in a direction more consistent with American practice of law and order.

The recent tragic publicity of the coal industry has taught both labor and government a lesson. The machinery exists for a settlement of the dispute and must be utilized immediately. Meanwhile public opinion has crystallized to a point that speaks loudly for necessary legislation to curb labor's abuses of its powers, so that we may get on with winning the war.

SABOTAGE

—How To Guard Against It

TO THE WORKERS of America is dedicated the gigantic task of making America strong; they must keep the wheels of industry spinning; they must keep the flame of freedom burning brightly as a beacon to the bewildered, beaten millions of Europe.

There is—RIGHT NOW—within this country's borders a highly organized, perfectly geared, well protected Fifth Column of SABOTEURS whose criminal operations have caused actual cases of sabotage, and a mounting wave of industrial "accidents" so frightening in numbers we dislike to think about them.

This isn't fiction. *It's a fact!* In the past months this wave of sabotage has reached such a height that actual stoppages in production have been caused.

Our growing industrial strength; our attacks on land, on sea, and in the air against our enemies, is the "all-out" signal for more desperate, widespread sabotage by Axis agents. Only a fool refuses to face these facts. Would Hitler go all-out to smash British production and strangle her overseas lifelines by submarine warfare, then stand idly by while this nation serves as "The United Nations' Arsenal"?

The FBI, state and local law enforcement agencies, and plant police will do all they can to check these saboteurs, but even the most optimistic of these agencies can do no better than hope to keep acts of sabotage at a minimum. They need the assistance of every plant worker, for, after all, the worker is the man with an intimate knowledge of his plant's production.

Here are important suggestions for the worker interested in his country's survival, the continuance of his job, and the betterment of his plant's production:

1. Remember YOU are an American. Remember YOU are a soldier

In the skilled hands of the nation's workers rests the fate of 130,000,000 Americans—of all humanity. They, the workers, the productive army upon whom our national security depends, must not fail!

By H. D. FARREN

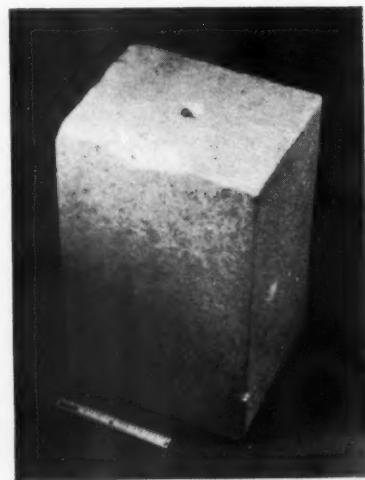
dier in the "front line" of industry. Remember YOU are as important to the security of this nation as any general.

2. Keep a close watch during working hours as to the state of your tools, equipment and machines for any sign of breakdown or tampering.

3. Make an immediate report to your superiors of any act which you consider "suspicious," or harmful to the plant's production.

Mining Congress Journal has been granted permission by the National Foremen's Institute, Deep River, Conn., to publish this article which is taken from its booklet carrying the same name as this story. Copies of the booklet are available to mine operators for their employes through the above organization. Minimum order of 50 copies can be placed at a nominal charge.

The photographs in this article appear through the courtesy of the Federal Bureau of Investigation, Washington, D. C. They show the destructive equipment smuggled into the country by the eight German saboteurs, who were all apprehended by the FBI.



A TNT demolition block showing hole to accommodate a detonator

4. Never allow yourself, for personal or other reasons, to point a finger of suspicion at a fellow-worker with a revenge motive.

5. Be more than willing to cooperate with any suggestions made by your employer for such protective measures as they consider urgent for the plant's protection. (Fingerprinting is considered unnecessary by some workers, but anyone who has nothing to hide and is anxious to aid America should have no objection to submitting to it.)

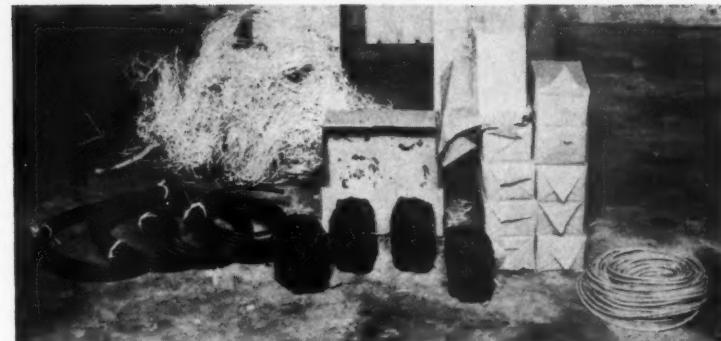
6. Don't be offended when plant guards "frisk" you before you enter the plant. This is no condemnation of you personally. You should submit to it with an idea of patriotism. (Many innocent workers carried deadly tubes of nitro-glycerine into plants in their lunch boxes during the last war. When the boxes were opened the innocent workman and his fellow-workers suffered instant death or crippling injuries.)

7. Never associate with persons of doubtful reputation. This person *might* be working for an enemy agent and, even if not, suspicion might be cast on you as the result of this association.

8. If you are in financial troubles try to iron them out yourself. If you find you can't, seek the advice of someone you can trust. NEVER accept gifts or money from strangers. You certainly will be indebted to them and they might be hostile agents seeking to win your confidence. Even though you are not responsible for any act of sabotage which might be committed in your plant, the fact that you accepted money from an agent might come to light during the subsequent investigation and you'd have a lot of explaining to do.

9. Do your job to the best of your ability at all times. Never allow anything to cause a "slow-up" in the productivity of the plant. Remember, that is what an enemy agent is willing to pay cold cash for. You are aiding him when you idle on the job.

10. Obey the plant rules for the good of all; take all grievances to the proper authorities. Do not air them vocally in the plant or outside. Enemy agents have their ears tuned for "grievances" as a



Box showing safety fuse, detonating fuse, ten blocks of TNT and four bombs resembling coal, smuggled into this country by German saboteurs

sign of breakdown and will pounce on your grievance as an opening wedge.

11. Do not allow yourself to become excited by so-called "pacifist" groups who will put in appearance. Your own common sense is the best measure of what is good for you and what isn't. It's plain to see America MUST arm herself to the teeth. Pacifism has no place in this scheme.

12. Keep your ears and eyes open. YOU might be responsible for the detection of something that might involve the lives of your fellow-employees, or a collapse of the plant production which would lead to an end of operations, meaning "payless days" for you.

13. Keep in mind that each soldier in the field must have three workers in the factories and plants behind him. For every worker who shirks his job, that soldier is one-third less effective. When YOU shirk on the job you undermine our national war effort.

14. Don't talk to strangers. Care-

less talk may cost lives; walls have ears; gossip and rumors are the tools of the saboteur; telephones are not instruments to be used in telling secrets. BEWARE of the stranger who asks questions, particularly the "friendly fellow" who wants to know all about your job. (Saboteurs prefer to work through willing or unsuspecting workers. It removes them from risk of detection and arrest.) Remember: Silence is golden at all times; in an emergency it is more precious than gold.

15. Watch your physical condition. Don't ever "drink" while on the job. A sluggish body or mind might cause you serious injury, or death. It might cost the limb or life of a fellow-worker. It might disrupt plant production. *Don't take chances!*

16. Be alert for the new worker who has not as yet learned the importance of safety and who, through carelessness, may threaten the safety of others, as well as the effectiveness of the plant and equipment.

17. In the push for production, equipment may sometimes be overloaded—fire hazards are greatly increased. Promptly report dangerous situations of this sort to your supervisor.

18. Report immediately any series of delays which to you seem needless, or "suspicious," with an idea toward finding out just what is causing them and who might be responsible for them.

19. Be alert to the introduction or substitution of inflammable materials or liquids into production in place of the safer fluids already in use.

20. Make it your job to see that all inflammable materials are disposed of properly. (Arson is the chief weapon of the saboteur.) See to it that fire exits, fire escapes and other exits and entrances are kept clear.

21. If you see a stranger in or



Contents of box showing electric blasting caps, pen and pencil delayed mechanism, detonators, ampules of acid, and other time delayed devices

near the plant who does not seem properly identified do not hesitate to ask who he is. Check up on him until the proper authorities have assured you his presence is proper.

22. Keep in mind that the army Hitler and his partners fear most is the army of American workingmen on the march to the plants of this nation. Hitler knows a united America can produce in greater quantities than any other nation on earth BUT—he knows America must be united; have the good will of the nation's workers, to accomplish this gigantic task.

23. Lastly, be *American*. Be an all-American! We must all pull together regardless of race, creed, color or political faith. America must produce! America MUST grow strong!

Each employee knows what is best for him. He knows that what is good for him is good for America. He knows that a constant guard, a patriotic duty and a desire for the preservation of our Republic is all that is necessary to destroy, in part, the vicious operations of enemy saboteurs.

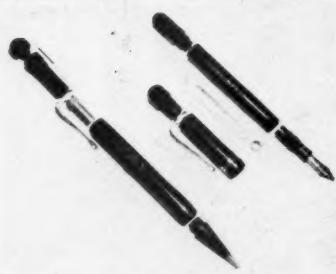
Legislation has been passed in all states of the Union providing heavy penalties under an anti-sabotage act. These acts provide for a charge of murder against any saboteur whose destruction of property causes death.

That is well, but—and it is a big BUT—this will not stop the saboteur. The saboteur is a soldier under cover. He knows his work is risky. He knows failure means capture, or death, or imprisonment. Yet, he must do his job with the same zeal, the same disregard for personal safety as the pilot of a Japanese or Nazi dive-bomber braving a tornado of anti-aircraft fire. The saboteur *must* answer to the Axis "undercover" high command if he fails in his duty. His fate, I might remind you, is less pleasant in their hands than if he were captured by our own police.

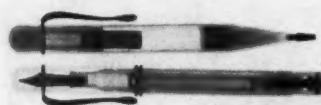
These laws, however, will have an effect. The acts of saboteurs will be less spread out, more desperate. The saboteur will lay his plans carefully, block out his plan of attack carefully, with far more cunning and a greater effort. Therefore his work will be directed solely at war industry plants—plants where he feels chances of detection are at the lowest ebb—where he knows that employees are ignorant of his methods of operations or don't care.

Let me remind you again that the saboteur faced with stiff penalties, an increasing pressure by law enforcement agencies and an alert nation, will seek more and more to work through the employee.

The employee stands to gain more, or lose more, in the war against the saboteur. If the plant in which he



Pen and pencil set dis-assembled showing component parts



X-ray photograph showing pen and pencil incendiary set in carrying case

works is rendered useless by acts of sabotage he may be without employment for from one week to one year, according to the extent of damage. Insurance records show that many plants wrecked in whole or in part by violent acts of sabotage are never rebuilt.

Remember: *Loss of human life where sabotage occurs is always counted among the employees.*

That's one of the main aims of enemy saboteurs. They know the tanks, guns, powder, ships or whatever it may be the sabotaged plant is turning out will be replaced after delay—they know, however, that the skilled workers killed can NEVER be replaced.

The employee is one of the main targets in destruction of plants. If enemy agents cannot win him over through propaganda, gifts or direct payment of money, then they try to destroy the worker.

It is the employee as an active member of the plant family—the producer in that family—who is more likely to observe quickly any suspected act of sabotage. It is the employee who should, and MUST maintain the strictest guard of his personal life, the protection of his job, and the production of his plant, and his employer's property.

Of extreme importance is the fact that it is NOT YOU who decide whether or not your plant is to be sabotaged. That rests solely with the saboteur. You might say, "Oh, we're not working on war orders . . . we're safe."

That isn't so. An agent working for a foreign government might SUS-

PECT you are. A person whose love for the Fatherland destroys all reason; a person whose hatred for England or Russia might destroy his sense of proportions, *might* select your plant as his target.

You MUST bear in mind that many men have died because of "mistaken identity." Now that the "all-out" war of saboteurs has been launched against the plants of this nation many an innocent victim, many an innocent plant will suffer unless alert protective measures and an alert nation of employees are prepared.

This nation and her allies are engaged in a death struggle greater than all the wars of history. Every American—soldier, sailor, pilot, industrial worker, professional man, scientist, and those engaged in every day jobs—must roll up his sleeves and pitch in.

For America today it IS blood, sweat and tears. This war will be won on three important fronts. With our armed forces in the fields of battle—with the workers in the defense plants—with the men, and women, and yes, even the children on the home front.

The criminal attack on our great Pacific fortress at Pearl Harbor is but an indication of the trickery, deceit and stab-in-the-back methods we can expect from our Axis foes.

This will NOT be a "clean" war in the front lines nor on the "home" front. It is a barroom brawl in which everything goes and the element of surprise will be of great importance.

Stop whistling in the dark; stop kidding yourself. The Axis have sabotaged the guts out of every defeated nation as a preliminary to physical invasion. THEY ARE PREPARED AND READY TO DO JUST THAT RIGHT HERE IN THE UNITED STATES OF AMERICA.

The arrests of Nazi, Italian and Japanese nationals is a step in the right direction. BUT—they thought of that, too.

Their paid agents, their undercover operatives, have been establishing what they hope is a foolproof setup in this country for more than EIGHT YEARS. These paid agents are professional saboteurs, the bulk of whom are NOT Axis nationals but agents of subversive groups in their employ.

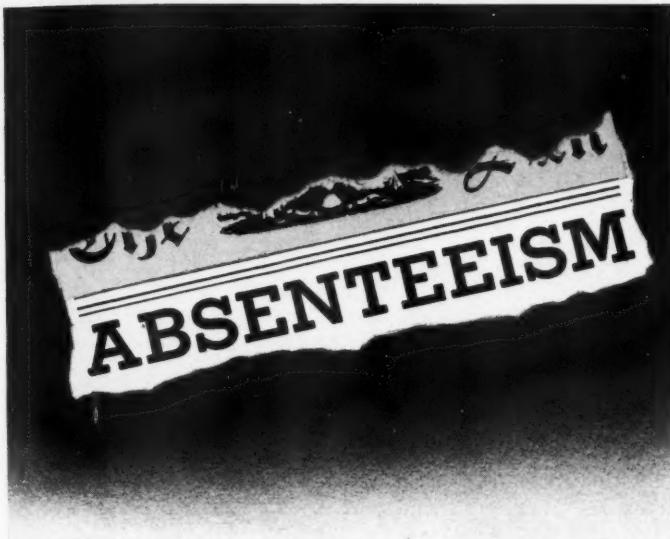
They say: "American industry must be crushed."

We say: "The Axis must be defeated to an extent that will forbid their ever again destroying the peace of the world."

Hitler has said: "The enemy must be gradually disintegrated, broken down, rotted."

That, fellow Americans, means SABOTAGE.

War is hell, and YOU can make it hotter than that for the saboteur.



—A

Coal Industry Problem*

ABSENTEEISM of workers in the essential war industries is receiving serious attention in many, if not most of the belligerent nations, and its continuance on a large scale in the industries of the United Nations could slow production seriously. In a mechanized war the nation that has the most soldiers with the greatest amount of essential matériel at least will have a great advantage if not the certainty of winning the war. To obtain and retain this advantage the United Nations must surpass the Axis on the industrial as well as the fighting front; therefore stoppage of work in essential war industries for any cause should be prevented.

As fuel is a basic necessity in the production of matériel for the combat forces, interruption of work resulting in decreased production could impede the entire war program. In addition, workers in war plants and other civilians must be kept comfortable to prevent loss of vital production through illness from inadequately heated homes and working places. The necessity for greatly increased coal production is enhanced by the shortage of fuel oil for industrial and domestic consumption, especially in the highly industrialized eastern part of the United States.

In view of the concern manifested in the effect on production of absenteeism in the coal-mining industry from whatever cause, a review of some of the information available on absenteeism in industry in general and in mining in particular seems pertinent.

* An abstract of a paper entitled "Absenteeism in the Coal Mining Industry," presented by Dr. Sayers at the Seventh Annual Meeting of the Industrial Hygiene Foundation of America, Inc., November, 1942.

With the acceleration of the war tempo on all fronts manpower has become a crucial problem in industry. To fill the requirements of the armed forces for men and matériel it is essential that each employe work as efficiently and continuously as possible

By R. R. SAYERS, M.D.

Director, U. S. Bureau of Mines; Medical Director, U. S. Public Health Service

There are three principal causes of absenteeism in industry—illness, accidents, and voluntary absences. Government and private agencies estimate that as a result of illness the average industrial worker loses between $7\frac{1}{2}$ and $9\frac{1}{2}$ workdays each year. A national health survey recently conducted by the Public Health Service¹ revealed that on any average day 2,600,000 workers are absent because of illness. The loss through sickness absenteeism in industry in general is estimated at 300,000,000 to 400,000,000 days annually, and the loss through sickness and injury of war production workers is said² to be 6,000,000 workdays every month. How much of the absenteeism attributed to illness is unavoidable has not been determined.

According to the United States Department of Labor³ total absences in industries of the United States will vary from 4 percent to 18 percent of the working days in the year. The probable figure, adjusted for modern, efficiently run plants, might come be-

tween 6 percent and 10 percent, with a probable average of 8 percent. It is estimated that of this 8 percent, about half (4 percent) is unavoidable, leaving approximately 4 percent that can be considered avoidable. If this latter cause of 50 percent avoidable absenteeism could be prevented 32 working hours for each worker would be saved annually;⁴ with about 16,000,000 persons in war industries about 500,000,000 hours of labor would be saved—enough to produce many munitions of war the immediate need of which is so vital to the victory of the United Nations.

Absenteeism in the Coal Mining Industry of Great Britain

Statistics on absenteeism in Great Britain are not available for the coal-mining industry as a whole, but on June 10, 1941, the Secretary of Mines⁵ admitted in the House of Commons that independent estimates gave distinct increases in avoidable loss of time from work as ranking from 3%

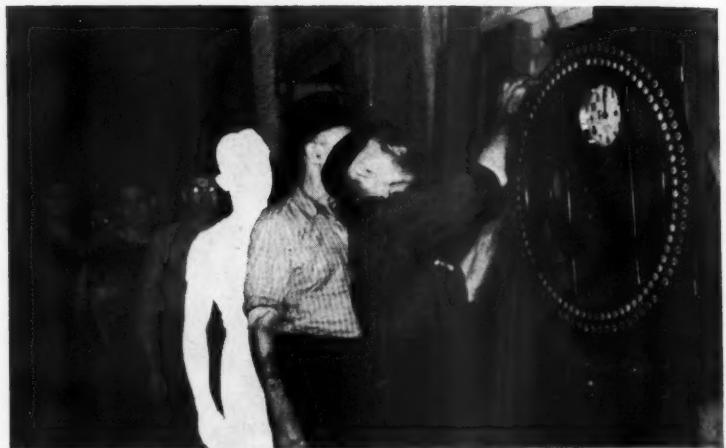
to 6½ percent and in an extreme case from 3 to 13 percent. For the five weeks ended September 12, 1942, the percentage of absenteeism for face workers was 19.39; for other underground workers it was 10.85; and for surface workers it was 6.60.⁶ According to Coal and Colliery News⁷ for June 10, 1942, between 1939 and 1942 absenteeism from all causes increased 7.07 percent in the collieries of Great Britain.

Part of this increase was due to absenteeism from accidents and sickness, largely because the "men stayed away for trivial reasons that would have been ignored in 1939." According to Lord Aberconway, chairman of the Yorkshire Amalgamated Collieries, Ltd., a reduction in absenteeism to the prewar level would increase the production of coal in the group of collieries he represented by 300,000 tons annually. He said that the high figure of absenteeism was due chiefly to a minority of the men employed; 60 percent, among them a large proportion of the older men, work excellent time; another 20 percent work indifferently; most of the lost time is attributable to the remaining 20 percent.

Britain Loses 13,000,000 Tons of Coal Annually Because of Absenteeism

The former secretary of the Mineworkers' Federation estimated that absenteeism was responsible for the loss of 13,000,000 tons of coal each year in Great Britain. In its 1941 report⁸ the Select Committee on National Expenditure deplored the fact that there had been but "a negligible increase" in the national coal output in spite of appeals and of the re-employment of some thousands of additional miners, and emphasized that "indisputable evidence has been received from both sides (management and unions) that avoidable absenteeism is still the main cause." In Coal and Colliery News⁹ for September 10, 1942, it was estimated that in the North West regional coal field absenteeism was resulting in a loss in production of 8,000 tons a day. About 10 percent of 80,000 miners in the region were guilty of absenteeism.

The manager¹⁰ of another colliery said that this statement regarding 3 percent absenteeism, which had received much publicity, would place the mines in question in an unjustifiably proud position, while in fact absenteeism was nearer 14 percent and coal-face absenteeism was 16.50 percent. This disagreement regarding the amount of absenteeism in this instance indicates the difficulty of determining with exactness the loss due to absenteeism.



—U. S. Bureau of Labor Standards
Absenteeism—The little man who wasn't there

United States

It is impossible from the data now available to determine with exactness the amount of absenteeism in industry that is avoidable. The tendency is to blame absenteeism on the worker, that is, the worker is absent owing to illness, to injury from accidents, or to some other personal reason. Many cases of illness and probably of injuries from accidents, however, can be traced to conditions prevailing in the working environment. When some of the employees in one section of an industrial establishment have more sickness absenteeism than those in another section the source should be sought in the working place, not in the employees.

This applies also to employees of one establishment compared with those of another. Two similar plants may be operating side by side, one having a high rate of sickness absenteeism and the other a low rate. The absenteeism in the plant with the high rate is avoidable if the conditions causing the illness can be corrected. This illustrates the difficulty of determining when absenteeism is avoidable and when it is not avoidable.

According to the Secretary of Mines for Pennsylvania,¹¹ the results of a survey of more than 65 percent of the miners in the hard- and soft-coal fields of that state disclosed that minor absenteeism resulted in a loss of more than half a million tons of production during June, 1942. More than half of this absenteeism was voluntary. The survey revealed that 135,929 man-days lost during the period mentioned caused a loss of 611,806 tons in production. An analysis of these figures shows that 68,867 of the lost man-days and 366,993 tons of the lost production were avoidable.

In the anthracite industry alone 63,678 man-days lost during June resulted in a production loss of 178,298

tons, more than 58 percent of which was avoidable. As causes of absence illness ranked first, with a loss of 11,132 man-days (17.48 percent of the total); mine water from floods second, with a loss of 10,528 man-days (16.53 percent of the total); mine injuries third, with 3,727 of the lost days, and "labor trouble" fourth, with 3,539 lost days.

Causes of Avoidable Absenteeism in Mines

In Great Britain, where many miners have volunteered or have been drafted into the armed forces or have left the pits for the munitions plants where wages are higher and working conditions less strenuous, the serious reduction in force has led to punishment by fines and imprisonment of miners who are absent from work without good excuse. Sickness or fatigue is given more frequently as an excuse for such absenteeism than in the United States, where conditions have not been so serious. To be excused for sickness absenteeism in Great Britain a miner must have a certificate from a physician; otherwise he may be prosecuted. Many of the men arrested have complained that they had rheumatism or some condition for which it was not customary to obtain a certificate, or that they were too tired to work continuously week in and week out without taking a day off now and then.

British miners¹² claim that the extent of avoidable absenteeism has been exaggerated and contend that among the contributory causes of failure of production to expand have been faulty management; industrial friction; scarcity of materials for repairs and replacements; the food rationing system; occasional inadequacy of transportation facilities for the conveyance of miners to the pits; periodical stoppages through lack of wagons; the drain on individual stamina of fire-

watching and Home Guard services; and employment of the less fit to obtain the necessary manpower.

The main causes listed by the British authorities for absenteeism are inadequate eating arrangements for long shifts; bad transportation facilities on weekends; widespread objection to Sunday work; and reduced incentive as a result of rationing and declining supplies of consumer goods in the face of mounting earnings. Another reason given is resentment at paying income tax and at the higher wages paid in other industries.

In regard to food rationing, it was pointed out recently¹³ that a miner usually consumes as much meat in two days as the present ration allows him for a week. Men doing heavy mine work have felt keenly the rationing of staple foods such as bacon, cheese, and beef.¹⁴ It is customary for them to eat one meal underground. Their food is brought from home and includes rationed products while factory employees usually obtain a meal a day at a canteen without the use of ration cards.

Methods of Controlling Avoidable Absenteeism in Coal Mines

Increased wages, exhortation, fines, and imprisonment seem to have had little effect in preventing a certain amount of avoidable absence from work among British miners. To the end of August, 1942, 572 miners had been prosecuted for absence from work without reasonable excuse or for persistent lateness. Of these 572 held for prosecution, 430 were fined, 115 sentenced to imprisonment, 12 bound over and 15 dismissed.¹⁵

Various methods of controlling unnecessary absenteeism in the mines have been and are being tried in Great Britain, apparently without complete success. Fines and imprisonment have had little effect. In June, 1942, the Fife area of the National Union of Scottish Mineworkers asked that action be taken with regard to fines and sentences imposed on miners guilty of absenteeism. It was stated¹⁶ that, although unjustifiable absenteeism was not condoned, imprisonment, especially of first offenders, was causing unrest in the Fife coal fields.

An increase in wages through an attendance bonus apparently had an effect opposite to that intended, as indicated by the statement of Sir Roger Keyes¹⁷ that it was right to raise the miners' wages, but someone in the House of Commons had predicted that if wages rose output would be lessened and it was. Sir Roger said:

"To give them bonus is not the way to do it. It was not the way with the old miners who fought in the last war. We must try to make the people of

this country realize that it is what they do that matters, not what they can get out of it. We shall win this war when we deserve to win, and we shall deserve to win when every man, woman and child is making a 100 percent effort."

The bonus was agreed upon by the Joint Standing Consultative Committee on May 22, 1941, effective June 6, 1941. This bonus (1s. per shift) was granted partly as an incentive to less absenteeism and larger output and partly to raise the earnings of the lower paid day wage workers.¹⁸ It is stated that friction developed owing mainly to the "reluctance of the miners and their leaders to recognize the limited scope and emergency character of the agreement. They wish to consider the bonus purely as an additional wage and not as a premium on regularity of attendance."

The miners were informed¹⁹ at the end of May of the conditions of labor that were to be operative from June 1, and the notices posted at the pithead in the South Wales coal field stated explicitly that the qualifications for the attendance bonus were the same as those for the guaranteed week, which did not apply to periods of sickness or to periods when the person concerned failed, without leave, to present himself for work during normal working hours.

Following: Persons reported for absenteeism have been allowed four days to submit their observations to the pit production committees; when both sides agree on the need for disciplinary action the case must be referred to the National Service Officer, other cases to be dealt with under the established disputes machinery; and a joint agreement as to the method of dealing with interruptions of work for the purpose of guaranteed wage of the piece workers.

On September 17, 1942,²⁰ a new order (Essential Work [Coal Mining Industry] [Amended] Order, 1942) was issued by which it became an offense to be absent from work without reasonable excuse or to be persistently late. The order also made it an offense to fail to comply with any lawful and reasonable orders given or persistently behaving at work in such a manner as to impede effective production. This took away from the pit committees the unpleasant task of dealing with absentees. In many coal mines these committees found it difficult to do their duty because they had at times to deal with men alongside of whom they had to work. On July 25, 1942, the joint secretary of the Monmouthshire and South Wales Coal Owners Association²¹ told the members that—

Managers were getting consider-

Combating Absenteeism

In the interest of reducing absenteeism in the mining industry, it has been suggested that we reproduce once again the following reminder from a recent issue of "The British Empire Digest," as published by "The Canadian Legion":

*"The Lord gave us two ends to use;
One to think with, one to sit with.
The war depends on which we choose,
Heads we win, tails we lose."*

This understanding, however, did not survive the first week's application of the new arrangement. The resentment of the rank and file at the disqualifications of their claim to the additional 1s. per shift was said to be general, and in some districts bitter, and on June 6 the whole basis of the original agreement was altered by the recognition of a list of exemptions including absences due to accidents, medical treatment, sickness, trade union duties, attendance at meetings of local authorities, Civil Defense services, etc.

The effect of the original conditions governing the bonus was a sharp decline in absenteeism, but with their removal in September, 1941, the rate rose again to 5 to 6 percent. Other decisions affecting the operation of the Essential Work Order include the fol-

able trouble in the way that pit committees were functioning. It seemed wholly unreasonable that persons with long experience in coal mining and who possessed certificates of competency should be more or less controlled by persons who held no such certificates. Absenteeism was not being dealt with and the men's representatives maintained that they could not be expected to deal with their fellow-workmen. They even asked for culprits to be lightly dealt with and dismissal was difficult to effect.

Mr. Williams went on to say that an increase in wages had never been followed by an increase in output. Instances of this occurred during the last war, but it was after the Armistice that wages soared above the cost of living. But the process was now going on during the war and it



In some metal mining districts the rate of absenteeism is virtually unchanged, whereas in others, it has shown a sharp increase

was a course that could not be afforded. It was a fact that no reasonable consideration was being given to the opinions of those who had studied the industry over many years and through many phases; the men who knew were being disregarded. When he last addressed the Branch it was on the subject of the Essential Work Order as applied to mining.

The situation in that respect was now much worse. The rules and regulations were so confused, so complicated and so unreasonable that it was hardly possible to discern what action could be taken. The changes had not helped the colliery manager but made things worse for him. The regulations appeared more suitable for a factory than for the mining industry. Because of the inability to maintain discipline by quick and effective measures, the production rate was lowered and a burden of responsibility placed on officials which was not theirs to bear at all.

In commenting on the report of absenteeism in anthracite mines, Gen. Disque²⁰ stated: "The last report on absenteeism in the Pennsylvania anthracite mines shows a loss of 63,000 man-days labor in one month. One-half of them were unexplained. That means, on an annual basis, that no one knows why the industry will lose production of about 1,000,000 tons. And we will need that coal. Considering the present economic importance of American labor unions, it would seem that they have a patriotic opportunity to impose disciplinary measures which will insure attendance at work when men can work."

It was found in England that the policy of excessive overtime in the war industries was self-defeating. The *Lancet*²¹ said that greater output by working longer hours could not be maintained and that the "result of excessive overtime has always been increased absenteeism and sickness."

Surveys in the United States by the Works Progress Administration indicate that an increase in the working time of the nearly 42 million non-agricultural workers to 48 hours a week would be equivalent to employing 4,000,000 more persons, and a further boost to 56 hours on the same basis would mean 8,000,000 more.

Proper Arrangement of Shifts Reduce Absenteeism

Some of the methods used in the United States to combat absenteeism follow. At one plant²² a bulletin board near the employees' entrance features a newspaper cartoon or headline on some important war development and stresses the fact that soldiers and sailors cannot take days off, therefore absenteeism on the production line is inexcusable. Accompanying the display are daily figures on production loss through absenteeism with a note apologizing to the men who actually were ill during their absence. This bulletin board, combined with friendly talks, has resulted in a very sharp drop in absences.

Another plant²³ with three-shift operations on a six-day basis was experiencing a 5 percent rate of absenteeism weekly, most of the absences oc-

curred on Saturday. Shop committees were formed of men whose brothers or sons are in the armed forces. These committees check with each absentee as to why he failed to report for work and try to impress upon him the importance of daily attendance of every man at his job in a war plant. Each day the previous day's attendance is posted on the bulletin board so that all the men will know who was absent. These measures are reported as having reduced absenteeism 25 percent.

Another plant operating three eight-hour shifts seven days a week was experiencing a 14 percent rate of absence concentrated largely on Saturday and Sunday. A check by the plant manager revealed that the absentees either were tired or their families applied pressure to get them to take a day off for recreation. The weekly routine was shortened and a revolving shift arranged so that each man is given one day off each week through the medium of employing seven men for each six jobs in all shifts. As a result absenteeism has dropped significantly.

The manager of a plant which was experiencing an abnormal amount of absenteeism found that most of the men were dissatisfied with the shift arrangement (three eight-hour shifts seven days a week). They preferred to have Sunday off even if it meant working longer hours on weekdays. A new arrangement was made whereby two 11-hour shifts were operated daily six days a week. Absences declined and work per man was improved.

Food is Important Factor

The statement has been made many times recently that food will win the war and the peace after the war. As mentioned already, one of the main causes of absenteeism among British miners is said to be unsatisfactory eating arrangements for long shifts and the rationing of food. Attempts have been made to solve the problem by supplying workers with proper food through canteen service.

This has been done to a much greater extent in factories than in the mines, although 819 coal mines employing more than 50 have established canteens, and 71 mines employing fewer than 50 have been provided with food service.²³ Canteens supplying full meals are in operation at 123 mines, under construction at 181, and in preparation at 147, making a total of 451 covering 57 percent of the personnel of the industry. Hot snacks are obtainable at a number of the other canteens also. Two hundred and eleven mines employing more than 50 persons have no canteen facilities at present, but at 110 of these, building or other preparatory work is in progress toward establishing canteens, and at nearly all the others the workmen do not want canteens.

There apparently is no agitation for such service in the mines of the United States, but several war plants have some form of canteen or cafeteria service for employees. The Douglas Aircraft Company serves three hot, properly balanced meals of nutritious food a day in huge plant cafeterias. The following results are claimed for this plan:²⁴ High production per man per hour; a remarkably low number of sick days per man per year; a very low industrial accident rate; and an unusually low rate of material spoilage.

Another method of insuring proper food for workers is the Servel Plan²⁵ developed in cooperation with the nutrition division of the Industrial Nutrition Advisory Committee of the Office of Defense, Health, and Welfare Service as a contribution to the war production effort. Though far from completed, the company nutrition program succeeded in four months, and with only a small percentage of employees actively participating, in effecting a 16 percent decrease in time lost from illness. These figures are based on 100,000 man-hours worked compared with those for the same period in 1941.

As the demand for men in the armed forces increases and the rationing of manpower becomes necessary, absenteeism will become an increasingly important problem. A standard method for determining absenteeism should be employed in all industries for comparative purposes. A study of absenteeism data collected by each company will show the principal

causes of time lost from work and the corrective measures necessary to eliminate them and thereby much of the absenteeism from illness as well as from other avoidable causes.

With the experience of Great Britain as an example and warning, representatives of the miners and operators should cooperate in forestalling any abnormal tendencies to absenteeism in the mines of the United States from any cause.

Absenteeism from sickness, accidents, and fatigue can be reduced greatly by the provision of medical service. The realization by the British government that conditions in the coal-mining industry with regard to manpower and absenteeism are more or less related to health is indicated by the recent provision of medical service for the mines. The chief medical inspector, who has been carrying on the health work in the mining industry alone for several years, is to have an assistant at headquarters and inspectors for each division to perfect first-aid organizations at the mines and investigate the diseases and ailments to which coal miners are especially liable.

The inspectors also will assist in carrying out the recommendations of the Medical Research Board on pneumoconiosis and in the inspection of young workers. Moreover, provision has been made for extension of facilities for the rehabilitation of injured workers. As a result of the success of the treatment in the local clinics, traveling clinics are being established to treat the milder cases.

There is a very strong feeling, reinforced by recent judgments in the courts, that rehabilitation should be a recognized and statutory adjunct of workmen's compensation, as it is better to assist an injured workman to regain his working proficiency than to encourage him to withdraw permanently from his employment and risk the mental distress and bodily deterioration that generally follow such a course.

Although many studies have been made in individual mines or mining districts of the United States on certain specific health hazards, little information is available regarding the general health and physical condition of the miners and the extent and cause of absenteeism. With the enactment of the Federal Coal Mine Inspection Law on May 7, 1941, the possibilities for obtaining information on health conditions among the miners of the United States have been greatly augmented. However, owing to the manpower demands of the War, it has been impossible to implement the law and make the necessary engineering and medical studies. When it is possible to carry out the provisions of the law, it is believed much can be done to improve health conditions in the mines and mining communities.

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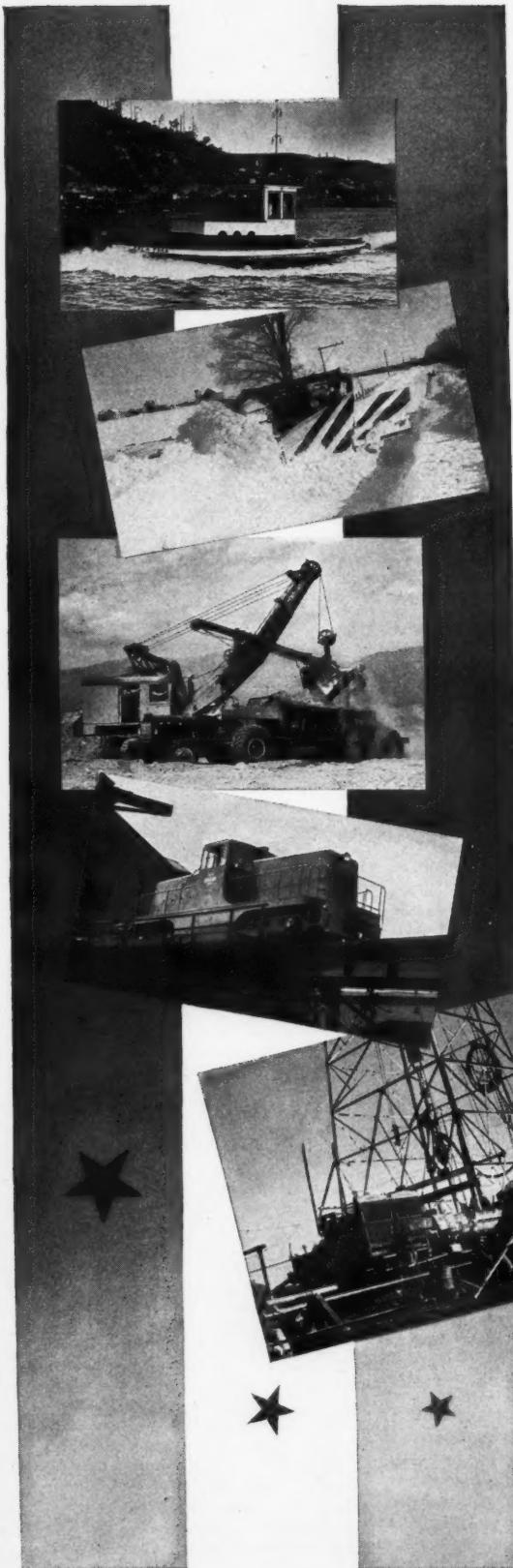
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COAL MINE WAR CONFERENCE THE AMERICAN MINING CONGRESS



MAY 17-18, 1943
Netherland Plaza Hotel
CINCINNATI, OHIO





GEORGE F. CAMPBELL

Vice President, Old Ben Coal Corp.

National Chairman, Program Committee

THE COAL MINING industry is in effect an army with more than a half million trained men now organized to produce a record tonnage in 1943 for the war needs. The industry at this period of our history must function along lines that are quite similar to those of our armed forces —men in the front lines underground must be properly directed by competent staff officials; the supply service must keep them furnished with tools and equipment; and transportation must provide a constant flow of coal from the mines to the consumer. The success in reaching our 1943 goal will be directly measured by our success in coordinating the many phases and details of production and supply.

The Coal Mine War Conference at Cincinnati is a general staff meeting of the coal industry to consider how we can carry out the job that lies before us. The subjects to be discussed there were selected by the Program Committee at a series of meetings held in various coal centers, and great care was given to the preparation of a program which would best serve the war effort.

On behalf of the Program Committee and on behalf of the men who have given their time and thought to the preparation of the papers, I sincerely urge executives, operating and purchasing personnel and equipment manufacturers of the coal industry to meet together at the 1943 Coal Mine War Conference and help solve the pressing problems which will be presented for discussion.

A handwritten signature in cursive ink, appearing to read "George F. Campbell". The signature is fluid and somewhat stylized, with a large, sweeping 'G' and 'C'.

National Chairman, Program Committee

The 20th Annual Coal Convention

ENLISTS 100% for the WAR!

May 17 and 18 at Cincinnati

COAL mining has the spotlight of the wartime home front, and as it drives ahead to achieve that all-time high objective of producing 660,000,000 tons of coal in 1943 its problems increase. This vital industry must maintain efficient operation so as to accelerate its striking power in the nation's war program during the remainder of this year. This progress must not be hindered, it must continue until every member of the Axis submits to unconditional surrender.

The industry has been fighting its share in the battle for victory for 18 months, and it, too, has become a seasoned warrior. The year and a half of hindsight has fortified the industry with knowledge gained from new experiences, and as it examines the list of growing problems and looks ahead to their solution in wartime, it is most timely that coal mine operators and manufacturers have the opportunity to meet and clarify these vital matters at the Coal Mine War Conference of the American Mining Congress, to be held May 17-18 at the Netherland Plaza, Cincinnati, Ohio.

This two-day meeting will be devoted strictly to business, which will afford the opportunity to fire a broadside of information aimed at the elimination of bottlenecks and hindrances that impede wartime coal production. Leaders of the industry will be present

to discuss and point out the urgent needs of coal mining, such as manpower, machinery and equipment and other important requirements for production. High ranking government officials will address the Conference on the over-all pattern of the war program and what the government is doing and what it plans to do to help the industry solve its problems.

Manpower—the coal operator's No. 1 problem will be discussed in general session by Fowler V. Harper, Deputy Chairman, War Manpower Commission. This will be the opening meeting of the conference on Monday morning, May 17. Mr. Harper has given personal attention to the wartime personnel needs of the coal industry, and his presence will afford an opportunity for open discussion in question and answer fashion on this important subject. Four speakers representing the leading coal production section of the nation will present their problems following Mr. Harper's address. These men are: Eugene McAuliffe, president, Union Pacific Coal Co., Omaha, Nebr., who will point out the seriousness of a coming coal famine next winter in the growing industrial Pacific Coast States, and F. S. Pfahler, president of Superior Coal



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Company, Chicago, Ill.; R. E. Salvati, vice president of Island Creek Coal Co., Holden, W. Va., and Walter F. Schulten, assistant to president, Pittsburgh Coal Co., Pittsburgh, Pa.

An up-to-the-minute talk on the activities and achievements of our fighting forces will be presented at the Monday luncheon by Colonel A. Robert Ginsburgh, Chief, Industrial Service Division, War Department. Colonel Ginsburgh will discuss the progress of the war and tasks which lie ahead of our armed forces in the various combat theatres in all parts of the world.

The President of the American Mining Congress, Howard I. Young, now Director, Mining Resources Coordinating Division, War Production Board, will be present to address the luncheon gathering on Tuesday on the matter of "Assisting the Mines to Maintain Full Production." Mr. Young's many years of experience with the numerous problems of the entire mining industry qualify him for his new duties in which the



COL. A. ROBT. GINSBURGH



HOWARD I. YOUNG

coal industry is receiving close attention.

Energy for the nation's war machines receives virtually all its life blood from the coal mines of the country. Any reduction of coal output through strikes or other unforeseen stoppages would be tantamount to losing a major battle in the war of survival. The importance of coal to the war program will be stressed in an address "Coal for War" by T. J. Thomas, Associate Director of Bituminous Coal, Office of Solid Fuels Coordinator.

A fulfillment of the production pattern for coal mining in 1943 depends upon the industry's ability (Continued on page 40)



T. J. THOMAS



A. S. KNOIZEN



HARRY M. MOSES

President, H. C. Frick Coke Co.
Chairman, Coal Division

IT IS A fortunate thing for our country today that the coal mining industry started to modernize its operations twenty years ago, for, without the use of machines, it is hardly possible that an adequate tonnage of coal could be produced to meet the present war needs. Mechanization grew slowly until the last five or six years, when it has made a rather spectacular advance, but both the early and the later progress has been due primarily to the fact that during these twenty years mining men have grown to accept the idea of combining their experience in working out technical problems.

Various means have been used to collect and disseminate information, such as published articles, sectional and local institutes, etc., but perhaps the greatest contributing factor in the development and adoption of new techniques has been the annual Cincinnati meeting of the American Mining Congress. It is the only meeting where men from all branches of the industry—bituminous and anthracite, operators and manufacturers, deep mining and strip mining—are brought together for a discussion and solution of their common problems.

The 1943 War Conference is of special importance, as there are so many new problems which have been brought about by wartime conditions. There is no time today for exhaustive trial and experiment—a quick solution is needed, and with this thought in mind, I wish to urge all who can—operators and manufacturers—to meet at Cincinnati in a concerted effort to answer some of the perplexing questions which confront us.



A handwritten signature in cursive ink, appearing to read "Harry M. Moses". Below the signature, the title "Chairman, Coal Division" is printed in a smaller, sans-serif font.

Program

MONDAY, MAY 17

10.00 A.M.—General Session

Opening of Conference

The Manpower Problem

Outlining the Personnel Situation in the Coal Industry.

FOWLER V. HARPER, Deputy Chairman, War Manpower Commission, Washington, D. C.

Mr. Harper has given personal attention to coal's manpower needs. His address will be followed by statements from a number of the major coal regions—setting forth specifically the current difficulties in maintaining essential personnel—and by an open forum or question-and-answer period on the entire manpower situation in the industry.

12.30 P.M.—Luncheon

The Military Situation

A frank discussion of the activities and progress of our armed forces in the various combat zones.

COL. A. ROBERT GINSBURGH, Chief, Industrial Services Division, War Department

2.30 P.M.—Deep Mining Session

Reducing Delays in Machine Operation

Maintaining Equipment for Sustained High Production

A. K. HERT, Gen. Mgr., Snow Hill Coal Corp., Terre Haute, Ind.

Organizing For Increased Production

Problems Arising from Shortages in Men and Material

J. M. JOHNSTON, Vice Pres., Bell & Zoller Coal & Mining Co., Zeigler, Ill.

Conservation of Labor

Improved Practices to Save Man-Hours Underground

C. C. HAGENBUCH, Chief Min. Engr., Hanna Coal Co., St. Clairsville, Ohio
and

FRANK G. SMITH, Gen. Supt., Sunday Creek Coal Co., Nelsonville, Ohio

2.30 P.M.—Strip Mining Session

Strip Mine Haulage

Experiences with Two Methods—Rail and Truck

C. W. WOOSLEY, Gen. Supt., Pyramid Coal Corp., Pinckneyville, Ill.

Maintenance and Repair in Wartime

Problems in Conditioning Strip Mining Equipment

W. B. PRATT, Treas., Dakota Collieries Co., Minneapolis, Minn.

Electrical Controls on Late Model Shovels

Modern Installations with Amplidyne and Rototrol

LESTER E. BRISCOE, Elec. Engr., Ayrshire Patoka Collieries Corp., Oakland City, Ind.

TUESDAY, MAY 18

9.30 A.M.—General Session

Quality Coal For War and Postwar Markets

Preparing Coal for Increased Industrial and Domestic Use

E. R. KEELER, Pres., Franklin County Coal Corp., Chicago, Ill.

Public Relations

Creating a Better Public Attitude Toward Coal

FRANK W. EARNEST, JR., Pres., Anthracite Industries, Inc., New York, N. Y.

Conservation of Material

Increasing Service Life of Machines and Equipment

JOSEPH PURSGLOVE, JR., Pres., Cornell Coke Co., Morgantown, W. Va.

9.30 A.M.—Purchasing Personnel Round Table

A special meeting arranged to give coal company purchasing agents and their staffs the opportunity to discuss their own particular problems and procedures with Director A. S. Knoizen of the WPB Mining Equipment Division.

12.30 P.M.—Luncheon

Assisting the Mines to Maintain Full Production

HOWARD I. YOUNG, Director, Mineral Resources Coordinating Division, War Production Board

Coal for War

T. J. THOMAS, Associate Deputy Solid Fuels Coordinator

Machinery and Equipment for Coal Mining

Discussion of the Industry's Current Problems of Materials Procurement

ARTHUR S. KNOIZEN, Director, Mining Equipment Division, War Production Board

2.30 P.M.—Deep Mining Session

Removing Seam Impurities Underground

Supplementing Surface Cleaning by Face Preparation

JOHN J. SNURE, Asst. Production Mgr., Rochester & Pittsburgh Coal Co., Indiana, Pa.

Safety in Wartime Mining

Reducing Accidents Arising from High-Pressure Operation

E. R. PRICE, Gen. Supt., Inland Steel Co., Wheelwright, Ky.

Coal Dust Control Underground

Methods to Reduce Hazards from Coal Dust

RODNEY H. HONAKER, Safety Dir., Guyana Eagle Coal Co., Amherstdale, W. Va.

2.30 P.M.—Strip Mining Session

Moving Overburden With Small Draglines

Methods with Small Capacity Equipment

HARRISON EITELJORG, Gen. Mgr., Morgan Coal Co., Indianapolis, Ind.

Moving Overburden With Large Draglines

Equipment with from 10 to 25 Cu. Yds. Capacity

T. H. LATIMER, Engr., United Electric Coal Cos., Chicago, Ill.

2.30 P.M.—Manufacturers Meeting

An open meeting of the mining manufacturers with officials of the WPB Mining Equipment Division, for discussion of allotments, equipment scheduling and general problems of mining manufacturers under CMP controls. A question-and-answer session to facilitate service to the mining industry.

6.30 P.M.—Annual Dinner

The final get-together of the Conference; an informal dinner followed by a stirring war talk by MAJ. GEN. EUGENE REYBOLD, Chief of Engineers, United States Army.



JOHN W. HADDOCK

Vice President, Sullivan Machinery Co.
Chairman, Manufacturers Division

THE PAST YEAR has tested the relationship to the American Mining Congress of the manufacturers of mining machinery and supplies. The Manufacturers Division has met this test and is today stronger and more effective than ever before with more than double the previous membership.

It has been inspiring to see the demonstrated confidence of manufacturers in the value to them of the Congress. It has been equally heartening to see the strength and influence of the Congress used so effectively on behalf of the manufacturers.

Once again there has been proof of the mutuality of interest between operators and manufacturers who are equally a part of the mining industry. Never has there been greater need of those activities which only the Congress can perform, and never has the Congress more completely demonstrated its value and effectiveness.

The manufacturers are determined that the Mining Congress shall be maintained in all its strength and vigor.



John W. Haddock
Chairman, Manufacturing Division

MANUFACTURERS DIVISION AMERICAN MINING CONGRESS



*Allis-Chalmers Manufacturing Company
*American Manganese Steel Div. of American Brake Shoe & Foundry Co.
American Brattice Cloth Corporation
*American Car & Foundry Company
*American Cyanamid & Chemical Corp.
American Mine Door Company
*American Steel & Wire Company
Anaconda Wire & Cable Company
*Atlas Powder Company
Barber-Greene Company
*Bethlehem Steel Company
Bixby-Zimmer Engineering Company
Bowdil Company
Broderick & Bascom Rope Company
*Brown-Fayro Company
Cambridge Machine & Supply Company
*Central Frog & Switch Company
Centrifugal & Mechanical Industries, Inc.
Chicago Pneumatic Tool Company
Cincinnati Mine Machinery Company
Cities Service Oil Company
Clarkson Manufacturing Company
Cleveland Rock Drill Company
*Cutler-Hammer, Inc.
Deister Concentrator Company
Differential Steel Car Company
Duff-Norton Manufacturing Company
*E. I. du Pont de Nemours & Co., Inc.
*Thomas A. Edison, Inc.
Eimco Corporation
*Electric Railway Equipment Company
Electric Storage Battery Company
*Enterprise Wheel & Car Corporation
*Fairbanks, Morse & Company
Flood City Brass & Electric Company
Gardner-Denver Company
*General Electric Company
*Goodman Manufacturing Company
Gorman-Rupp Company
Guyan Machinery Company
Harnischfeger Corporation
*Hendrick Manufacturing Company
*Hercules Powder Company
*Hockensmith Wheel & Mine Car Company
*Robt. Holmes & Bros., Inc.
*Hubert Oil & Grease Company
Irwin Foundry & Mine Car Company
*I-T-E Circuit Breaker Company
*Jeffrey Manufacturing Company
Johnson-March Corporation
*Joy Manufacturing Company
Kanawha Manufacturing Company
Kensington Steel Company

* Charter Members

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La-Del Conveyor & Manufacturing Co.
Lee-Norse Company
*A. Leschen & Sons Rope Company
*Link-Belt Company
E. J. Longyear Company
*McGraw-Hill Publishing Co., Inc.
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*Mine Safety Appliances Company
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Mott Core Drilling Company
*Myers-Whaley Company
*National Carbon Co., Inc.
National Electric Coil Company
National Malleable & Steel Castings Co.
Nordberg Manufacturing Company
*Ohio Brass Company
Owens-Corning Fiberglas Corporation
Pacific Foundry Company
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Philco Corporation, Storage Battery Div.
*Phillips Mine & Mill Supply Company
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Post-Glover Electric Company
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Frank Prox Company, Inc.
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Rome Cable Corporation
Sauerman Bros., Inc.
Sheffield Steel Corporation
*Simplex Wire & Cable Company
Simplicity Engineering Company
*S K F Industries, Inc.
*Streeter-Amet Company
*Sullivan Machinery Company
Tamping Bag Company
Templeton, Kenly & Company
Texas Company
*Timken Roller Bearing Company
Tool Steel Gear & Pinion Company
*W. S. Tyler Company
Ultra-Violet Products, Inc.
Union Wire Rope Corporation
*United Engineers & Constructors, Inc.
U. S. Rubber Company, Wire Division
*Watt Car & Wheel Company
*Weir Kilby Corporation
*Westinghouse Elec. & Mfg. Company
West Virginia Rail Company

Speakers



A. K. HERT

★ A. K. HERT, General Manager of Snow Hill Coal Corporation, has had wide experience in the supervision of mechanized mines. His address on "Reducing Delays in Machine Operation" will outline the effect of operating delays and show the extent to which coal tonnage can be increased by eliminating small percentages of time losses.



J. M. JOHNSTON

★ J. M. JOHNSTON, Vice President of Bell & Zoller Coal & Mining Company, has been engaged for a number of years in engineering and operating positions. He will speak on "Organizing for Increased Production," explaining the supervisory problems being encountered in meeting difficulties imposed by shortages of manpower and delays in supply deliveries.



C. C. HAGENBUCH

★ C. C. HAGENBUCH, Chief Mining Engineer of Hanna Coal Company, has made many engineering analyses of underground service haulage problems. His paper on "Conservation of Labor" will show the results of some studies which have indicated that man-hours in haulage road construction and maintenance can be saved through the use of fabricated track material.



FRANK G. SMITH

★ FRANK G. SMITH, General Superintendent of Sunday Creek Coal Company, will present a further phase of "Conservation of Labor," by giving a detailed account of a committee investigation on the practicability of preventing slate falls through the application of a waterproof coating on the mine roof.



E. R. KEELER

★ E. R. KEELER, President of Franklin County Coal Corporation, is well known throughout the coal industry and through long experience is versed in the problems of coal distribution and marketing. His address on "Quality Coal for War and Postwar Markets" will stress the importance of maintaining high preparation standards during the present emergency.



FRANK W. EARNEST, JR.

★ FRANK W. EARNEST, JR., President of Anthracite Industries, Inc., has taken an active part in developing and directing a program for anthracite which has resulted in creating a better public understanding of coal. His subject of "Public Relations" is of special interest at this time when the entire industry should make a concerted effort toward promoting increased utilization of coal for heat and power.



JOS. PURSGLOVE, JR.

★ JOSEPH PURSGLOVE, JR., President of Cornell Coke Company, has been engaged for a number of years in coal preparation and mine operation. He will describe "Conservation of Material" as now being practiced by coal mining companies in his district, to meet shortages of critical war materials by reclaiming worn parts and rebuilding equipment.

Discussion Speakers on Manpower

EUGENE McAULIFFE, President of Union Pacific Coal Company.

F. S. PFAHLER, President of Superior Coal Company.

R. E. SALVATI, Vice President of Island Creek Coal Company.

WALTER F. SCHULTEN, Assistant to President, Pittsburgh Coal Company.

COAL MINE WAR CONFERENCE

★ W. B. PRATT, Treasurer of Dakota Collieries Company, is mining open pits with steam shovels and rail haulage in the coal fields of North Dakota. "Maintenance and Repair in Wartime" involves many new problems; with steam equipment these problems are somewhat different from those in electric operations with truck haulage, and his paper will explain in some detail how difficulties are being met.



W. B. PRATT

★ LESTER E. BRISCOE, Electrical Engineer of Ayrshire Patake Collieries Corporation, is well versed in the electrical power problems of strip mining. His paper on "Electrical Controls on Late Model Shovels" will describe the modern trend in control apparatus on shovels and draglines, with descriptions of the application of amplidyne and rototrol regulators.



LESTER E. BRISCOE

★ HARRISON EITELJORG, General Manager of Morgan Coal Company, has operated strip mining in several states and his paper on "Moving Overburden with Small Draglines" will describe the use of smaller type draglines and shovels, of from three to nine cubic yards capacity, in medium depth of cover.



HARRISON EITELJORG

★ T. H. LATIMER, Engineer of United Electric Coal Companies, will explain the problems involved in "Moving Overburden with Large Draglines" and will show how this equipment, in combination with shovels of from 10 to 25 cubic yards capacity, is used in heavy cover.



T. H. LATIMER

★ JOHN J. SNURE, Assistant Production Manager of Rochester & Pittsburgh Coal Company, has devoted a great amount of time and study to problems of producing coal from a variety of seam conditions. His paper on "Removing Seam Impurities Underground" will show how selective mining and other methods of face preparation can increase the capacity and efficiency of the surface cleaning plant.



JOHN J. SNURE

★ E. R. PRICE, General Superintendent of Inland Steel Company, has long been associated with the coal industry in this field, where he has been personally responsible for attaining an excellent record of accident reduction in his mines. His paper on "Safety in Wartime Mining" will discuss the effect which the demand for increased coal production is having on frequency and severity of injuries.



E. R. PRICE

★ RODNEY H. HONAKER, Safety Director of Guyan Eagle Coal Company, has made a special study of the important problem of "Coal Dust Control Underground," and will give an account of various methods used to reduce coal dust hazards, particularly in connection with the operations of drilling and shooting in mechanical loading and conveyor mining.



RODNEY H. HONAKER

★ C. W. WOOSLEY, General Superintendent of Pyramid Coal Corporation, has been employed in strip mining for a number of years and has had a wide experience with various methods and types of equipment. His paper on "Strip Mine Haulage" will describe two different classes of operation—those using rail haulage and those using truck haulage.



C. W. WOOSLEY

to obtain equipment, supplies and spare parts. The industry is practicing conservation and careful maintenance of equipment to make it last without breakdown as long as possible. The daily speed of the thousands of mechanized pieces of equipment employed in coal mining is causing wear and tear at a rapid rate, and availability of new machines and spare parts constitutes one of the operator's outstanding problems. Arthur S. Knoizen, Director of Mining Equipment Division, War Production Board, will also address the Tuesday luncheon on the subject "Machinery and Equipment for Coal Mining."

Following the luncheons manufacturers serving the coal mining industry will meet with officials of the WPB Mining Equipment Division for discussion of allotments, equipment scheduling and general problems of mining manufacturers under CMP control.

The Program Committee has carefully appraised the numerous operating problems of coal mining in wartime, and it has selected a group of speakers that has had wide experience in the industry. Their respective subjects will deal mostly with typical operating problems which have arisen during the war. Two sessions will be held on Monday afternoon, one devoted to underground coal mining and the other to strip mining. The theme of the deep mining session will be increased production, conservation of labor and efficient machine operation.

Heavy activity is now under way at all strip mines and problems faced by operators in this industry will be discussed in the strip mining sessions. Such subjects as haulage roads, maintenance and repair in wartime, and the latest electrical controls employed on power shovels used in strip mining operations are of especial interest at this time.

During this critical wartime period more anthracite and bituminous coal is being consumed than ever before. The shortage of fuel oil is expanding the markets for the coal mining industry, which is preparing now to hold these markets in peacetime. Operators will be brought up to date on this important subject during the general session on Tuesday morning. Two papers, one dealing with quality coal for war and



CHAS. W. CONNOR
Chairman, Floor Committee

postwar markets, and the other explaining the importance of creating a better public attitude toward the use of coal are extremely timely. Another paper given at this session will deal with the conservation of material.

On Tuesday afternoon deep mining and strip mining will be further discussed. Papers devoted to underground mining operations will include a discussion of removing seam impurities or supplementing surface cleaning by face preparation, and the efforts of operators to reduce accidents arising from the high pressure mining operations so necessary in wartime. Methods to reduce hazards from coal dust will also be discussed. At the strip mining session, operating papers will discuss the removal of overburden with small and large dragline shovels.

Discussion Speakers on Manpower



EUGENE MC AULIFFE



F. S. PFAHLER



W. F. SCHULTE



R. E. SALVATI



MAJ. GEN. REYBOLD

At the annual banquet to be held Tuesday evening, a stirring "morale building" address will be given by Major General Eugene Reybold, Chief of Engineers, U. S. Army, who recently returned from the fighting front in North Africa.

COAL FAMINE

-Looming Ahead in the Growing Industrial West

*A frank discussion of this vital wartime problem by Eugene McAuliffe, President,
The Union Pacific Coal Company*

ON NOVEMBER 1, 1919, a substantial portion of the bituminous coal industry of the nation ceased production, the operators and representatives of the United Mine Workers of America failing to agree on a wage schedule. The then President, Woodrow Wilson, was incapacitated by an illness from which he never recovered, and the adjudication of the dispute was attempted by the Secretary of Labor, Mr. W. B. Wilson, a former international officer of the Mine Workers' Union, and Dr. Harry A. Garfield, the son of a former President of the United States, a lawyer and educator by profession. Mr. Wilson and Dr. Garfield, men of marked ability and integrity, labored with the problem without tangible result. Mr. Wilson stood immovably for an increase in wages of 31.16 percent, Dr. Garfield for 14 percent, the coal operators refusing Mr. Wilson's figure, the Mine Workers, with equal obstinacy, refusing Dr. Garfield's offer. On December 3 the conference was dissolved, whereupon Dr. Garfield, as U. S. Fuel Administrator, courageously issued an order restricting the use of coal to essential purposes.

During the restriction period, places of amusement were, from sheer lack of resources, deprived of fuel and light, churches and schools were closed, streets were darkened, apartment furnaces were banked and the temperature fell in the homes of the people, many of whom were suffering from a world-wide epidemic, whose toll in the United States totaled 600,000 lives. Mr. John L. Lewis, who then, as now, was the President of the United Mine Workers' Union, was summoned to appear before Judge Anderson of the United States District Court at Indianapolis. A member of the bedridden President's fam-

ily, the U. S. Attorney General, accompanied Mr. Lewis to Indianapolis, where an agreement to resume work was entered into, resumption of production taking place immediately after December 10.

The dispute was finally resolved through a recommendation made by a special Bituminous Coal Commission, and increases approximating 27 percent were entered into in the unionized field. In 1919-1920, coal was more generally used as a source of heat, both for industrial and domestic use, than at present; however, a definite drift from fuel oil to coal has been under way nation-wide for some months, a trend which may, on the Pacific Coast, assume startling proportions on short notice.

Labor Shortage Worse Than Strikes

In reviewing the situation that arose in 1919, the possibility of a coal labor strike of extended duration in the near future is not anticipated; as a matter of fact, a 30- or 40-days' cessation of the mining of coal, representing as it would at this time a catastrophe of major proportions, is unthinkable. In 1919, a substantial portion of the nation's coal was mined by non-union labor, whereas today practically all coal, anthracite and bituminous, is covered by the union of which Mr. Lewis is the head. With an abiding belief in the right of labor to organize, and committed to the theory of collective bargaining, we do, however, confess our doubts as to the propriety of any labor organization, by whomsoever administered, being allowed, at any time, to shut off the heat, light and power of the nation. Standing as they do outside the regulatory laws that govern public service corporations, many of which render perhaps a less necessary serv-

ice than does the coal industry, there is a growing feeling that too much power is now vested in labor organizations which control the production of national necessities, a power gained through unilateral and one-sided legislation, flanked by partisan court decisions.

The situation which confronts the fuel supply of the West during the fall and winter before us, therefore, is not the hazard of an extended coal strike, but that of an insufficient and incompetent labor supply, insufficient housing to care for a sufficient number of mine workers if such can be obtained, plus a growing measure of voluntary absenteeism. Heavy labor turnover, like absenteeism, invariably results in a reduction in average daily output, the losses resulting from an unstable force invariably compounded. This brings us to the question; what coal tonnage does the West require, and what are the difficulties that attach to securing the needed fuel?

Any survey of the Western coal fuel situation must take full cognizance of the fact that "the West," an empire as measured in extent, is dependent for its coal supply on the mines within its area, plus the fact that the major tonnage of coal produced in the West is largely located quite remote from the Western theatre of war industry and the area in which the major population is located. That the coal mines of the five Western coal producing states must supply the coal needed by the Western consuming region becomes readily apparent when the mileage from the next nearest coal supply of consequence to the larger consuming and bunkerage points on the Pacific Coast is considered. Distances from source of supply is shown in Table I.

Further, it must not be forgotten

TABLE I

Source of supply	Distance in miles by rail			
	Los Angeles	San Francisco	Portland	Seattle
Southern Illinois Mines.....	2,450	2,414	2,423	2,606
Lake cargo coal from Duluth.....			1,892	1,911
Lake cargo coal originates in the states of West Virginia, Virginia, Pennsylvania, Ohio, and eastern Kentucky, with an initial rail haul to lake ports and a water haul to Duluth.				

TABLE II

Producing Area	1918	1940	1942
Alaska.....	75,606	148,417	280,000
Montana.....	4,532,505	2,803,749	3,858,000
New Mexico.....	4,023,239	1,230,060	1,696,000
Utah.....	5,136,825	3,284,904	5,670,000
Washington.....	4,082,212	1,690,442	1,988,000
Wyoming.....	9,438,688	5,373,289	8,025,000
Total.....	27,289,075	14,530,861	21,517,000
Ratio.....	100.0	53.2	78.8

that due to war activities, the population of the Pacific Coast states has increased in the past two years an estimated three-quarters of a million. Can the Western coal fields, including the low grade fuels in Alaska, produce the needed coal? We think such is entirely possible, providing manpower is obtainable to produce it.

The production of bituminous coal in the United States reached its highest point in 1918, the period of World War I, when a total of 579,385,820 tons were mined, the total production for the year 1942 (advance figures), 580,000,000 tons, the equivalent of the 1918 production. The trend in production of bituminous coal (including sub-bituminous and lignite), in the five Western states and Alaska, for the years 1918, 1940, and 1942, is shown in Table II.

When an analysis of the Western coal production is attempted, due weight must be given to the fact that a substantial portion of the coal produced in the five Western states and Alaska consists of lignite and sub-bituminous grades of low thermal value, necessitating, not only an added volume of coal, but likewise of transportation, to establish an equality in heat value with the higher grade coals. Only two states in the West, Utah and New Mexico, confine their rail shipments to coal of bituminous grade.

The production of the coal mines in Colorado has not been considered as available to the Pacific Coast region, because of an added rail haul, the fact that much of the production is sub-bituminous in character, and the further and compelling reason that the Colorado coal should be moved eastward to supplement the recent heavily increased load placed on the mines of Kansas, Missouri, Oklahoma, and Arkansas.

The production of coal for the years shown serves, in the case of the 1918

output, to show the then war demand in the West, although the active theatre of war materiel production and ocean transport was then largely confined to the East, while in the present war a great concentration of ship, airplane, and munition production has sprung up on the Pacific Coast, which is also the gateway to what is more specifically our own theatre of war, that with Japan.

In analyzing the gain in tonnage, 1942 over 1940, it should be remembered that the increase came not from additional mines or men employed, but rather from increased working time,

more days worked per year. Considering that an eight-hour day prevailed in 1918 with a seven-hour day in effect since April 1, 1934, the gain in output is encouraging but it is not enough.

The problems now necessary of solution are common to all coal mining properties in the West, including those of the Union Pacific Coal Company, which are charged with the responsibility of fueling the Union Pacific Railroad, and which mined, in 1942, a tonnage equivalent to 24.6 percent of that produced in the combined fields of Alaska, Montana, New Mexico, Utah, Washington, and Wyoming, and 65.8 percent of the output of all Wyoming mines, during the same year. The growth in production of the Union Pacific Coal Company's mines in recent years is shown in Table III.

That the percent increase (37.08) in tons mined does not equal the percent (49.39) in days worked in 1943, is due to the reduction of 1,692 tons in combined daily output of our mines, this situation due wholly to excessive labor turnover and absenteeism, the number of mine workers employed exceeding the number in service during the first quarter of 1942, the loss so sustained during the first quarter 151,902 tons, equivalent, if continued, to 607,608 tons for the year 1943. The figures covering men employed, and labor turnover for the year 1942 and first quarter of 1943, are informative. They are found in Table IV.

TABLE III

Year	Tons Mined	Year	Tons Mined
1933.....	2,097,558	1938.....	3,016,978
1934.....	2,402,553	1939.....	3,261,003
1935.....	2,877,731	1940.....	3,588,500
1936.....	3,286,159	1941.....	4,276,186
1937.....	3,315,628	1942.....	5,283,346
Estimated requirements—		1943.....	7,000,000

Indicative of the situation that now exists on our properties, the first quarter of 1942 and 1943 compared are as follows:

	Tons Mined	Year 1942		Tons Mined	Year 1943		Decrease Tons Per Day
		Days Worked	Tons Per Day		Days Worked	Tons Per Day	
January.....	456,294	22.69	20,110	586,697	30.83	19,030	1,080
February.....	372,389	17.75	20,980	530,711	28.00	18,954	2,026
March.....	405,361	19.69	20,587	574,187	31.00	18,522	2,065
3 Months.....	1,234,044	60.13	20,523	1,691,595	89.83	18,831
Increase.....				457,551	29.70		
Decrease.....							1,692
Percent.....					37.08	49.39	8.24

TABLE IV

Period	Beginning of Period	Employed	Left Service	Net Gain	Annual Labor Turnover Percent
Year 1942.....	2,771	2,632	2,573	59	92.85
Jan. 3 to Mar. 28, 1943.....	2,830	980	873	107	123.39

TABLE V

Period	Percent	Period	Percent
July, 1942	6.3	December, 1942	9.7
August, 1942	4.9	January, 1943	10.8
September, 1942	5.2	February, 1943	10.8
October, 1942	6.8	March, 1943	10.4
November, 1942	9.8		

It will be observed that the excessive rate of turnover, 92.85 percent, suffered in 1942, has grown to 123.39 percent in the first quarter of 1943, and a daily average of 1,692 tons less output is now being mined with a substantially larger force of employes. Every employer of labor knows what excessive labor turnover does to unit production, the tonnage lost in our mines by reduced efficiency, 214,527 tons in the seven months, August, 1942, to February, 1943, inclusive, secondary to the greater loss of 377,235 tons lost by voluntary absenteeism during the same seven months' period.

That voluntary absenteeism is a growing menace to the fuel supply of the West is evidenced by the increase in all absenteeism in the mines of the Union Pacific Coal Company for the period during which accurate figures have been maintained, as shown in Table V.

A recent careful survey of the prospective coal requirements of the Northwestern consuming area, that is, northern Idaho, Oregon, and Washington, for the coming coal year, 1943-4, indicates that an additional million tons must be found somewhere, and considering the added requirements of California, including coking coal for the steel furnaces now in operation in California, plus the added furnaces now under construction in Utah, the total added fuel, bunkerage and coking requirements of the Rocky Mountain-Pacific area will be not less than three million tons over the tonnage consumed in the mild winter year of 1942-3.

In the event any further diversion of oil tankers is made from the California coast-wise fuel oil field to war purposes, then the enforced further translation from fuel oil to coal fuel on the Pacific Coast may, create a problem that, from the standpoint of coal mine manpower and rail transportation, would prove overwhelming. It should be borne in mind that some 200,000 tons of lake dock coal was moved to the Northwestern territory in the coal year ending March 31, the delivered cost to the consumer ranging from \$15 to \$17 per ton. A further supply approximating 160,000 tons was imported from Canada during the same period, and neither of these sources of supply can be absolutely depended upon in 1943-4.

We have heretofore adverted to the long rail haul that is attached to the movement of coal from the Great

Lakes to the Northwest. The railroads have done and are now doing a great job, but somewhere and sometime, they will reach their ultimate capacity and transportation must be conserved. Wherein lies our production limitation.

We have touched on the voluntary absentee question. Since the seven-day week of seven hours per day, with time and one-half on holidays, was authorized on November 2, 1942, by the U. M. W. of A., our percent of absenteeism has grown, much of this due to the seven-day week. The Western operators have made repeated appeals to President John L. Lewis to establish a work week of six days of eight hours, with time and one-half for all work done over 35 hours per week, this arrangement to run only for the duration of the war. We know that this schedule would appeal

to the workers and would reduce our absenteeism, thus providing more coal. The appeals made have met with recurring denials and production goes down.

Certain interesting elements enter into the absenteeism suffered in the mines of the Union Pacific Coal Company. For example, more men absent themselves on the day than on the night shift. Up and moving around, they seemingly find it easier to go to the lamp and change houses at 3 p. m. than they do at 7 a. m. Again, the percentage of men who fail to report for work on holidays when they are paid time and one-half, exceeds by 129 percent those who stay out on non-holidays. We are sympathetic with this disinclination to work seven days a week, but necessity, for the time being, compels a continuation of the seven-day week; tragically, we are compelled to continue to work the seventh day and will have to do so until a growing measure of absenteeism compels us to go back to the shorter week.

Mr. Lewis, in his public utterances, has expressed much solicitude for the hungry mine worker who, unable to buy nourishing food, cannot work with regularity. We are here speaking

These two statements of high wages received by coal miners are no more representative of the average earnings than the low earnings showing overdrafts by miners displayed in recent newspaper paid advertisements by the United Mine Workers

Form 120
Local 9-40-1500
THE UNION PACIFIC COAL CO.

Reliance		
STATEMENT OF EARNINGS OF [REDACTED] No. [REDACTED]		
during	January	1943
16-6/7 HOURS	\$ 14.40	242.76
20 DAYS	9.60	192.00
1 DAY	13.80	13.80
3-1/7 HOURS	12.00	37.68
1-3/7 HOURS	11.13	15.90
TOTAL EARNINGS		502.14
DEDUCTIONS		
BENT. WATER. ELECTRIC LIGHT	15.60	
COAL	4.98	
LAMP RENTAL	2.64	
BATH HOUSE	1.00	
MERCHANDISE		
EXPENSES		
U. M. W. of A.	3.80	
HOSPITAL COMMISSION	3.50	
WYOMING SALES TAX	1.16	
FED. SOCIAL SECURITY TAX	4.94	
FED. INCOME TAX (Victory)	22.40	
U. S. WAR SAVINGS BONDS	37.60	
Goggles	1.50	
TOTAL DEDUCTIONS	97.92	
BALANCE DUE	404.22	
TOWNS PREMIUM @		
•		
•		
TOTAL PREMIUM EARNINGS		
FED. SOCIAL SECURITY TAX		
BALANCE DUE		

Form 120
Local 9-40-1500
THE UNION PACIFIC COAL CO.

Reliance		
STATEMENT OF EARNINGS OF [REDACTED] No. [REDACTED]		
during	January	1943
28-1/7 HOURS	\$ 11.34	319.14
20 DAYS	7.56	151.20
HOURS		
TOTAL		
TOTAL EARNINGS		470.34
DEDUCTIONS		
BENT. WATER. ELECTRIC LIGHT		
COAL	6.50	
LAMP RENTAL		
BATH HOUSE	1.00	
MERCHANDISE	9.46	
EXPENSES		
U. M. W. of A.	3.80	
HOSPITAL COMMISSION	3.50	
WYOMING SALES TAX	2.00	
FED. SOCIAL SECURITY TAX	4.70	
FED. INCOME TAX (Victory)	20.40	
U. S. WAR SAVINGS BONDS	37.50	
TOTAL DEDUCTIONS		87.06
BALANCE DUE		383.28
TOWNS PREMIUM @		
•		
•		
TOTAL PREMIUM EARNINGS		
FED. SOCIAL SECURITY TAX		
BALANCE DUE		

for the Western branch of the coal industry where the theatrical fulminations of the nation's great tragedian just do not fit. During the year 1942 and the first two months of 1943, the average net earnings (occupational deductions excluded) of some 2,800 mine workers, men, women, and boys (we now employ 58 women in shops and on mine tipples), are found in Table VI.

Mr. Lewis, in a widely published advertisement, recently reproduced the monthly earnings of two mine workers, one of whom earned \$103.89 in February last, ending the month with an overdraft of \$9.50, the second man earned in the same month \$89.08, with an overdraft of \$7.55. The advertisement (Question 8) read:

"Have you been misled by published figures of coal miners' earnings?"

We were certainly not misled by the two statements published in the advertisement, but on the other hand, we believe they were intentionally meant to deceive, and are no more representative of the average condition than are the two examples of high earnings made on the Union Pacific Coal Company's properties presented herewith.

For obvious reasons, we have deleted the name and check number of each of the two employees. These men deserve due credit for their effort to produce coal, but the fact remains that their average day was, in the one instance, but of 10 hours and 52 minutes duration, and in the second instance, but 9 hours and 30 minutes long. Incidentally, but one of these men worked below ground.

What must be done to supply the West with the necessary coal required? In the writer's opinion, an undue proportion of the Union Pacific Coal Company's employees have voluntarily and by draft gone to the armed forces, 590 men enlisted and drafted since January 1, 1942, or 20 percent of our present force. These men were the cream of our force. At the present time, the War Manpower Commission is concentrating on the task of reinforcing the lumber, agricultural, non-ferrous mines, and beet-growing industries, while the number of men employed in the coal mines of the West is steadily decreasing in number, our appeals for at least uniform treatment going by default. Steps should be taken and at once, to put the coal industry on at least an equality with the other four Western industries. If the coal industry in the West is to provide the fuel required in the 12 months ahead, those responsible must:

1. Stop the appalling voluntary separations that are growing increasingly frequent.

2. Suspend, for the time being, the drafting of coal miners for war service.

TABLE VI

	Year 1942	January 1943	February 1943
Per hour	\$1.24	\$1.35	\$1.32
Per shift of 7 hours	8.69	9.47	9.25
Per month	195.04	261.86	232.17
Per year	2,340.38	3,142.32	2,786.04
Average days (7 hours) worked	269.3	27.7	25.1

3. Set up some form of control of absenteeism; we believe that an eight-hour day, six days per week, would help materially.

4. Completely revise the OPA regulations governing the purchase of food supplies, meat in particular. Restricted as our men are to from 2 to 2.5 pounds of meat per week, only sufficient to fill their lunch pails, some men will not work more than four or five days per week.

Those who are responsible for the required production of coal in the Western states have been restricted for several months past, by regulations promulgated by individuals remotely located from the mines and unacquainted with the mining of coal and the mine workers' psychology. In too many instances, theories that might be applicable to factory workers are imposed on those who have spent many long and arduous years in the difficult task of operating mines. The details of the interferences suffered would require too much space to explain in this presentation, but the fact remains that less of the obstructive and more of the constructive must be forthcoming if the West is to be fueled in the next 12 months.

The daily press teams with reports of the demands put out by the United Mine Workers of America, and the newspapers of April 6 carry extended advertisements published and paid for

by the mine workers' union, defending as best they can the extraordinary demands made by President Lewis on the coal industry. It is not our purpose to reply to the distorted and flamboyant arguments put out by the union's propagandists, but we do wish to suggest that if the War Labor Board yields any material portion of the excessive wage increases demanded by Mr. Lewis, there will be a coal famine in the West in 1943-4, providing the war demand continues. Higher wages have provoked indifference to continuous work and have sharply increased absenteeism, and if the demand for a work-day of eight hours "portal to portal" is granted, increasing wages and shortening the productive work-day to less than the present seven hours, the railroads, the armed forces, industries, and the people of the West can not be fueled; therein lies the road to complete disaster.

We have the mines, machinery and managerial ability to produce on our properties not less than 7,000,000 tons of coal in 1943, and the Western states, including Colorado, can readily step up their production from 29,507,000 tons in 1942 to 35,000,000 in 1943, sufficient to protect all demands without drawing on lake-borne or Canadian coal. Something must be done and at once if disaster is to be averted.

Manpower in Western coal mines must be made available now for the shipments of coal needed next winter for the rapidly growing industrial Pacific Coast States





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8. The Wheat lead-acid type Battery — lighter in weight but rugged in construction — produces a substantially higher voltage throughout the shift thereby guaranteeing a higher working light efficiency. Its light producing efficiency is maintained above 80% of maximum — and provides more light per pound weight.

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- 3 Choice of 3 reflectors gives narrow concentrated beam, a medium beam, or a widespread beam of light — suits all working conditions.
- 4 Headpiece weighs less than 6 ounces, Lamp Cord 6 ounces, Battery 62 ounces — Total weight of Lamp complete 74 ounces.
- 5 Headpiece molded of strong bakelite; sealed, moisture-proof and dust-proof.
- 6 Rubber battery case — non-conductor of electricity — a valuable safety feature.
- 7 Battery solution (free) limited to one ounce total both cells.
- 8 Lead-acid type battery maintains high voltage throughout shift (80+% efficiency) — year after year.
- 9 Battery charged through headpiece and cord of cap lamp — a daily test of all connections.
- 10 Designed for self-service charging system for lowest lamphouse operating cost.
- 11 To charge, headpiece is simply slipped on to key in charging rack, and turned to make contact. Nothing to take apart — unit-sealed construction.
- 12 A payment plan (purchase or rental) to meet the requirements of companies — large and small.

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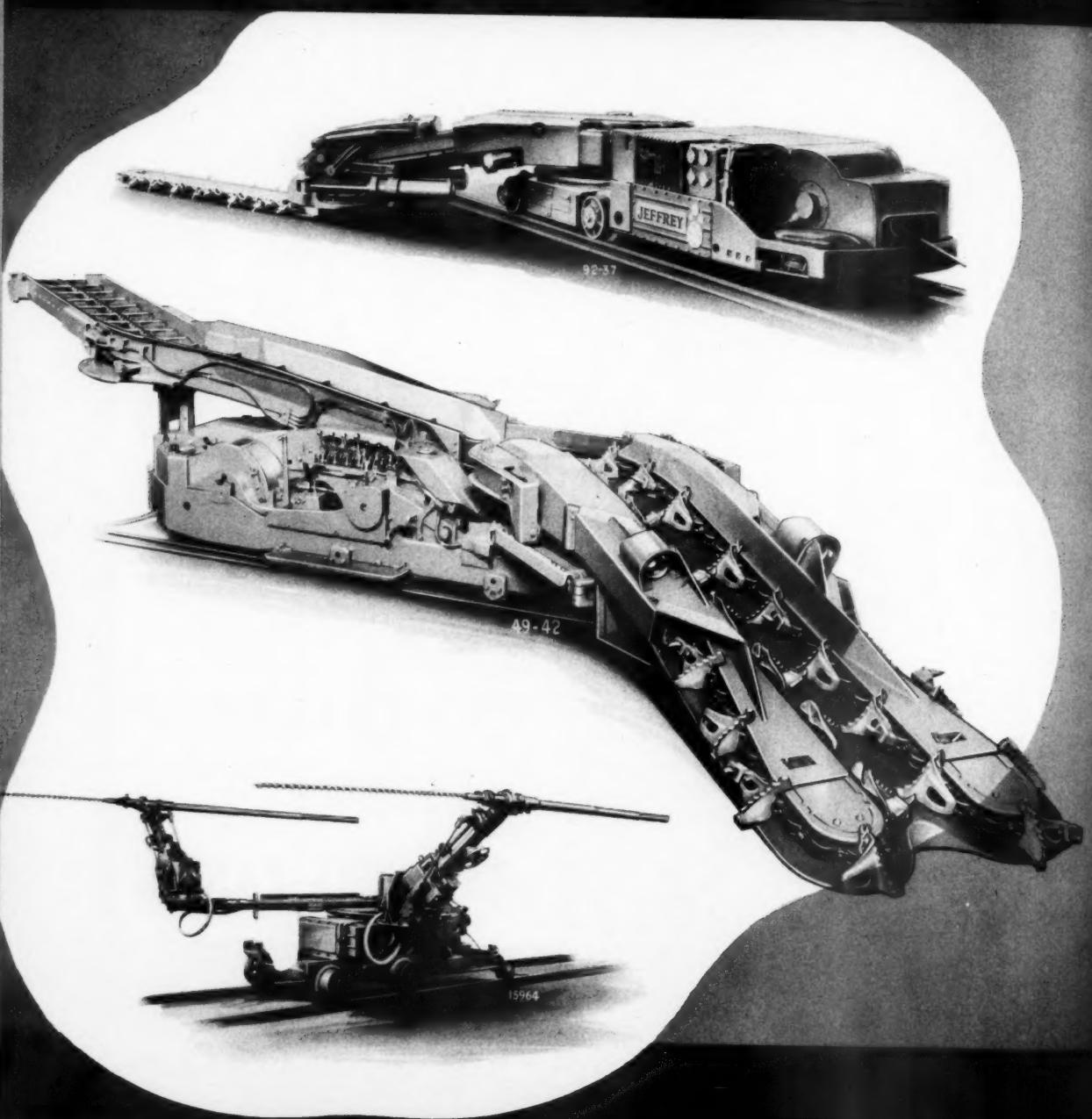
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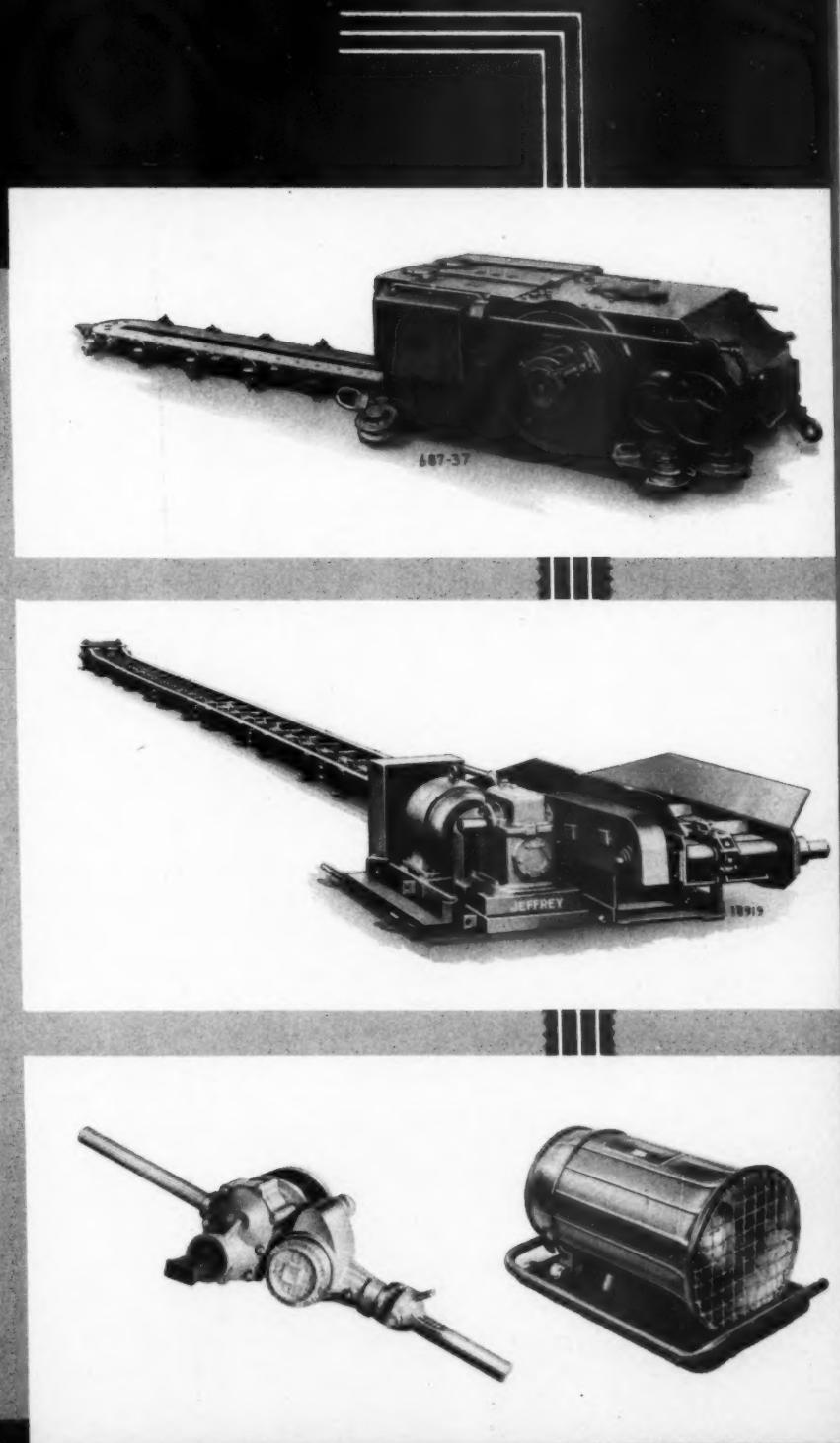
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The Jeffrey "BIG THREE" simplifies the problem of efficient machine-grouping for a continuous cycle of production. Jeffrey 29-U Cutter, 56-A Driller and L-600 Loader (shown at left) . . . all track-mounted, all highly flexible. In range, speed and capacity, they're adapted to work together.

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The equipment shown at the right was designed for the lower coal seams. It includes: The Jeffrey 35-B series of coal cutters; the Jeffrey line of chain-type conveyors; Jeffrey A-7 drill, and a Jeffrey Aerodyne Midget blower. These are just a few of the units Jeffrey has available for complete mechanization of your mining operations.



AND
ABOVE GROUND

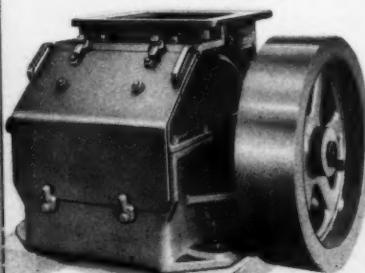
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FOOD RATIONING

— Descends Upon the Mining Industry

A wartime problem that seriously confronts the industry for the first time in history. Means outlined for making best nutritional use of available foods

FOOD IS a weapon of war and food rationing is a tool for Victory. To all of us, rationing means some changes in food habits. However, if the best use is made of available food, it should not mean any lowering of the health and energy of any of us. It may even mean an improvement in health for many.

For miners, and other workers, whose labor is essential to Victory, one of the changes in food habits that rationing makes necessary is a reduction in meat consumption. Reports from various mining communities throughout the country indicate that the meat consumption, per week, of many miners has been as high as 7 to 9 pounds. The civilian consumption of meat in 1941 exceeded by 15 pounds per person the average consumed in 1935-39 period. This increased consumption of meat, plus the supplies needed for our armed forces and allies, has made rationing necessary, in order to insure that all our civilians obtain fair supplies of meat, despite the 1943 production goal of 25.7 billion pounds, an increase of nearly 4 billion pounds above the estimated 1942 production. The amount of meat that can be secured under the present rationing varies from 2 to 2½ pounds, according to the manner in which the 16 points covering meat, fats and oils, and cheese are used.

Even the biggest man doing the hardest work will not suffer by eating as little as 1½ pounds of lean meat a week, if he eats other strength and health-building foods each day, according to nutrition experts and medical authorities. No more than one-third of the daily protein requirements need be supplied by animal protein. This can be satisfactorily secured from poultry, fish, milk and eggs. The balance of the protein needs can be supplied readily from vegetable sources such as whole grain or restored cere-

als, whole grain or enriched bread, peas, dried beans, lentils, soybeans, peanuts and nuts.

Such restriction of meat consumption does mean, however, that in order to maintain health and strength, workers need adequate amounts of other foods in the "Basic 7" list of foods which is the popular interpretation of the dietary allowances recommended by the Food and Nutrition Board, National Research Council, for the maintenance of good nutrition.

THE BASIC 7

GROUP 1

Green and Yellow Vegetables
(Raw, cooked, frozen, or canned)

GROUP 2

Oranges, Tomatoes, Grapefruit
or Raw Cabbage or Salad Greens

GROUP 3

Potatoes and Other Vegetables and Fruits
(Raw, dried, cooked, frozen, or canned)

GROUP 4

Milk and Milk Products
Fluid, evaporated, dried milk or cheese

GROUP 5

Meat, Poultry, Fish or Eggs
or Dried Beans, Peas, Nuts or
Peanut Butter

GROUP 6

Bread, Flour and Cereals
Natural wholegrain—or enriched
or restored

GROUP 7

Butter and Fortified Margarine

IN WARTIME

Choose from each group, if possible,
but adapt to wartime shortages.

If Scarce in Use More from
Group 2 Group 1, 3
Group 4 Group 1, 5, 6
Group 5 (meats) Group 4, 5 (beans)
Group 7 Group 1, 4.

Both the Food Distribution Administration and the Office of Price Administration have recognized that workers living in isolated communities where they can have access to only limited varieties of perishable foods need extra allotments of some rationed foods. The Office of Price Administration has also recognized the marketing difficulties in isolated areas, and made provision for persons or institutions in these areas to go before their local Ration Boards and secure a certificate in exchange for their stamps in their Ration Book 2. This certificate would permit them to buy rationed foods at such times as convenient before the expiration date of the Ration Book 2.

In making recommendations for additional allotments of food based on nutritional needs, the Food Distribution Administration has recommended to the Office of Price Administration that supplementation of rationed foods be made to miners and other workers in isolated areas.

The best methods of handling this problem have been under consideration by the Food Distribution Administration and the Office of Price Administration for several weeks. Recognition of the needs of workers in isolated localities for additional processed foods was publicly made by the Office of Price Administration when they issued Amendment 6 to Ration Order 13, March 12, which provides for additional allotments of processed foods to persons or institutions in isolated areas. The amendment reads as follows:

"Consumers, who by reason of their occupation or location, are unable to

obtain unrationed fruits or vegetables with which to supplement their processed foods ration, except at infrequent intervals and who are unable to keep such foods under the period during which the supply is not available to them, must rely on processed foods for their subsistence. The normal ration of processed fruits and vegetables is not enough under such circumstances.

"Accordingly this amendment provides that consumers who cannot get enough fresh fruits and vegetables to meet minimum nutrition needs for such foods because (1) Supplies of such foods are not reasonably accessible to them, except at infrequent intervals, and (2) they have no facilities for storing such foods long enough and in the quantity required for their needs, may apply to their local board for additional points."

Consideration is being given by the Office of Price Administration to additional allotments of meat and fats, and processed foods to workers in isolated areas, as recommended by the Food Distribution Administration. An announcement is expected to be made early in May which will provide some additional allowances of meat and fats, and processed foods to workers in isolated areas.

The market list herewith for high calorie diets for an active worker in isolated areas, on the basis of the present ration point allowances provides some of all the "Basic 7" foods needed for adequate nutrition.

This diet list provides 4,500 calories a day. It does not include poultry or fresh fish. Where these are available the diets can be made still more acceptable. The only fresh vegetables or fruits listed are potatoes, sweet potatoes, cabbage and apples. Such vegetables as rutabagas, turnips, parsnips and onions, since they store well, may be used in many places to supplement this list.

When supplementation is provided, this market list could be increased with additional amounts of meat, fats and processed foods of high nutritive value, such as ham, liver, peas, tomatoes, corn, and dried beans, peas and lentils.

Never before has our country faced the problem of utilizing so great an amount of its food resources to wage a world war. It means new problems

MARKET LIST FOR HIGH CALORIE DIETS For Men Working in Isolated Localities

RATIONED FOODS :	Lbs./Wk.
Meat, Fish and Cheese	
Ham, smoked	.25
Shoulder, smoked	.50
Chuck, beef*	.50
Bacon	
Cheese	
Fats	
Butter	.25
Lard	.30
Margarine	.25
Leaf Fat	.25
Salt Pork	.25
Legumes and Nuts	
Beans, dry	.50
Sugars and Syrups	
Sugar	.60
Vegetables, leafy, green, yellow, canned	
Spinach	.36
Green Beans	
Peas	.18
Tomatoes, canned	
Citrus	
Grapefruit juice, canned	
Vegetables, other	
Corn, canned	
Total	5.10
* Can be corned.	
UNRATIONED :	Lbs./Wk.
Meat, Fish, Cheese	
Haddock, smoked	.25
Fats	
Mayonnaise	.25
Eggs	.67
Milk	
Evaporated	2.0
Canned, condensed	1.5
Grain	
Flour, enriched	6.0
Rice	.15
Cornmeal	1.9
Oatmeal	.25
Legumes, Nut	
Peanuts	.25
Peanut Butter	.50
Sugar and Syrups	
Molasses	.25
Vegetables, leafy, green and yellow	
Cabbage, fresh	1.0
Sweet Potatoes, fresh	2.0
Potatoes, white	5.0
Fruits, other	
Apples, fresh	1.0
Prunes, dried	.11
Unrationed	23.08
Rationed	5.19
Total	28.27

for Government, for employers and for employees. Only by cooperating in meeting these problems can we make the adjustments that are necessary to win the war.

Many of us do not recognize the difference between what the basic food

requirements are to maintain health, and what we think is necessary because of the food habits we established in peace time.

Nutrition science has determined our basic food needs. It has also made it possible for us to know that such unrationed foods as enriched and whole-grain bread, whole-grain and fortified cereals are useful sources of the "morale" vitamin B. Without sufficient amounts of foods providing this vitamin, in a short time workers become irritable and tired. Thus, nutrition science has shown that food can play an important part in employer-employee relations and in production, as well as in health protection.

Miners' Canteen Service Rapidly Growing in England

England has recognized the importance of keeping workers adequately fed on their jobs by requiring that all employers of 250 or more workers provide canteen service. On December 30, 1942, a cable from Will Lowther, president of the Mine Workers Federation stated that there are now 860 canteens at mine pits. Before very long, according to the report, 95 percent of the mine workers in Britain will be provided with mine's canteens.

As there is now increased dependence upon institutional feeding in this country, under the rationing program, the Nutrition in Industry Division urges employers of more than 250 workers, or employers with workers in isolated areas to provide some type of food service for their workers. In the mining industry, canteens, box lunch services or mess hall services providing nutritious food would be one of the most effective, practical ways to protect the health of workers, reduce absenteeism and maintain production.

To aid employers in instituting new feeding facilities or extending inadequate facilities, the Nutrition in Industry Division of the Food Distribution Administration provides an advisory service without cost to employers. Requests should be made to one of the seven regional offices or to the Washington office of the Food Distribution Administration. Regional industrial nutritionists can make suggestions based upon on-the-ground ob-

Lunch time in a metal mine. Tables and electric hot plates are provided underground at many properties. More than 200,000 men in metal and non-metallic mining are confronted with the wartime problem of food rationing





Food rationing reaches more than 500,000 mine workers in the coal industry

servations as to the type of service that would be most practical, they can also provide menu suggestions and suggest ways in which nutrition education for the workers and their families can be instituted.

Nutrition Educational Programs Under Way

Assisting in the nutrition educational programs to help workers and their families make the best use of available foods, are thousands of volunteers cooperating with the Government's nutrition program in forty-eight state committees, more than 2,600 county committees, and many community committees. Posters, the "Basic 7" foods leaflet, press and radio releases and other materials, nutrition classes and food demonstrations are used in the nutrition education program.

Workers securing one or more meals at a mess hall, canteen, cafeteria or restaurant are, in effect, receiving food in addition to their ration allotment, as no ration stamps are required for these meals, unless employees live on the premises and eat eight or more meals a week there. The regulations covering these types of eating establishments are contained in Ration Order 5 and amendments thereto. One of the amendments provides for food allotments to new feeding operations for workers. Emergency certificates enabling them to obtain supplies of rationed foods while local rationing boards are acting on their application for food allotments may be issued by the local rationing board.

Additional food can often be provided workers through the reduction of food waste and the simplification of menus. Some suggestions for simple canteen lunches and packed lunches are included in a booklet "Meal Planning for Industrial Workers." This booklet and a "Manual of Industrial Nutrition" will soon be off the press

and can be secured from the Washington office or a regional office upon request.

Typical lunch suggestions contained in the meal planning booklet are as follows:

CANTEEN LUNCHES

Beef Stew with vegetables
Boiled Potatoes
Enriched or whole wheat bread and butter

* * *

Italian Spaghetti with Meat Balls
Buttered Carrots
Enriched or whole wheat bread and butter

* * *

Vegetable Chowder
Ham and relish sandwich on enriched bread
Raisin and chopped peanut sandwich on whole wheat bread

* * *

Fish loaf baked with tomato sauce
Scalloped potatoes
Enriched or whole wheat bread and butter

PACKED COLD LUNCHES

Smoked Tongue sandwich on enriched bread
Sliced tomato and lettuce sandwich on whole wheat bread
Gingerbread
Milk
Whole apple

Ground cheese and green pepper sandwich on whole wheat bread
Baked beans and catsup sandwich on enriched bread
Apple, orange and raisin salad
Raw carrot strips
Milk

* * *

Sliced pork sandwich on enriched bread
Raw vegetable sandwich on whole wheat bread
Fruit salad
Cup cake
Milk

* * *

Chicken sandwich on enriched bread
Chopped raisin and nut sandwich on whole wheat bread
Fresh vegetable salad
Chocolate pudding
Milk.

Food for workers can also be increased through Victory Gardens. Many miners as well as other war workers are patriotically joining in the Victory Garden campaign to increase food production.

In this all out war for the preservation of our individual freedom, every one, including even the men in the services, is now subject to food rationing. The Food Distribution Administration sets aside certain quantities of food for military use. Within that quantity the services must guide their purchases. The quantities are sufficiently large so no man in uniform need go hungry, but at the same time, the armed forces take strict precautions to prevent waste that would boost the demand on supplies. According to an Office of War Information release of May 3, the Army estimates anticipate slightly more than eight-tenths of a pound of meat per day for each soldier in the Army. This would be about 5.6 pounds per week.

Food is a weapon of war as vital as guns. By sharing our food with our armed forces and peoples in countries where loyalty to the United Nations is necessary to Victory, each of us has a part in winning the war. It may mean pulling in our belts. It need not mean sacrificing health, strength or the will to work and win, while workers, employers and Government cooperate.

Nutrition in Industry Regional Offices

PACIFIC REGION—821 Market Street, San Francisco, Calif.: California, Nevada, Oregon, Arizona, Washington.

ROCKY MOUNTAIN REGION—1536 Welton Street, Denver, Colo.; Montana, Idaho, Wyoming, Utah, Colorado, New Mexico.

MID-WEST REGION—The Old Colony Building, Des Moines, Iowa: North Dakota, South Dakota, Nebraska, Kansas, Minnesota, Iowa, Missouri.

SOUTH-WEST REGION—425 Wilson Building, Dallas, Texas: Oklahoma, Texas, Arkansas, Louisiana.

SOUTHERN REGION—Western Union Building, Atlanta, Ga.: Kentucky, Virginia, Tennessee, North Carolina, South Carolina, Mississippi, Alabama, Georgia, Florida.

GREAT LAKES REGION—5 South Wabash Avenue, Chicago, Ill.: Wisconsin, Michigan, Illinois, Indiana, Ohio.

NORTH-EAST REGION—150 Broadway, New York, N. Y.: Maine, New Hampshire, Vermont, Massachusetts, Connecticut, Rhode Island, New York, Pennsylvania, New Jersey, Delaware, Maryland, West Virginia.

Multiple-Shift Mechanical Mining In Some Bituminous Coal Mines

Editor's Note: The following extract, reprinted from Bureau of Mines Information Circular 7223, gives the conclusions drawn by the U. S. Bureau of Mines from their study of 45 operations using mechanical loaders or conveyors and located in several states. The complete reports, as published in several bulletins, give full details on these mines, including plans of the underground workings, description of the seam conditions and other information such as type and amount of equipment used, men employed on the machine and other crews, production per man-shift and per machine-shift. It will of course be understood that the accompanying graphs refer only to the mines studied, and other operations outside of this group may or may not agree with the figures shown in the curves for machine and man-shift production.

By*

**ALBERT L. TOENGES
EARL R. MAIZE
FRANK A. JONES**

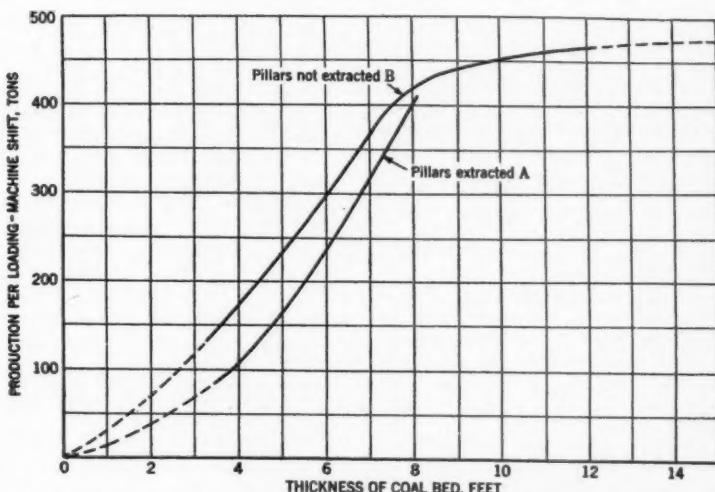


Fig. 1. Relation of thickness of bed to production per loading machine shift (tons)

Mine 35												Mine 36(a)												Mine 36(b)											
Pillar extraction						Pillar extraction						Pillar extraction						Pillar extraction						Pillar extraction						Pillar extraction					
Mine 35			Mine 35			Mine 36			Mine 36			Mine 36			Mine 36			Mine 36			Mine 36			Mine 36			Mine 36			Mine 36					
14 men	13 men	11.25 men	11 men			18 men	17.5 men	12.35 men	12 men			19 men	19 men	18 men	15 men			16.25 men	16.25 men	15 men				19 men	19 men	18 men	15 men	16.25 men	16.25 men	15 men					
8						11	11					11	11										11	11											
7						8	7					7	6											7	7										
6						10	9	10				6	5										6	6											
5						5	6	5				5	5										5	5											
4						4	4	4				4	4										4	4											
3						3	3	3				3	3										3	3											
2						2	2	2				2	2										2	2											
1						1	1	1															1	1											
126	129	83	125			188	190	180	180	197			292	262	350	378	380	319															Tonnage per unit		

Fig. 2. Occupational distribution of leading crew men

* Mr. Toenges is Principal coal-mining engineer, Fuel and Explosives Service; Mr. Maize is Senior coal-mine inspector, Coal-Mine Inspection Division; and Mr. Jones is Assistant mining engineer, Coal Mining Section, Fuel and Explosives Service; all with the U. S. Bureau of Mines.

and choose the type of equipment suited to them. In many instances no change was made in the design of the mine or method of extraction. Introduction of loading equipment, especially mobile loading machines, usually requires some change in mine design and method of extracting pillars, particularly where the roof is fragile. Where no thought has been given this problem, small pillars and stumps that normally were removed by hand-loading methods using close timbering have been lost and recovery has declined.

Credit should be given to those operators who first tried the various types of equipment and passed on their experience. Successful transition was usually made after considerable study of bed and roof conditions.

2. To the question, "Can the method of extracting pillars by hand be adapted to mechanical loading?" no positive answer can be given. Hand-loading methods usually are unsuited for mechanical loading devices, particularly mobile loading machines. The most successful hand-mining method for pillar removal is the pocket and wing in rectangular blocks. Close timbering is required to recover the wing. This system has not been successful with mechanical loading devices because the area is restricted by timbering. Pillar extraction with mechanical devices, however, has been successful with the open-end or thin-shell systems, because the rate of extraction is rapid. The time element in hand-loading does not favor the open-end method.

3. Past experience indicates that less tonnage per day per mobile loading machine is produced on pillar work than where pillars are not recovered. The opposite is usually true where conveyors or scrapers are used.

4. Extraction of pillars with machines introduces additional hazards. Motion and noise of machines and transporting equipment and, in some instances, the liberation of additional gas due to rapid exposure of wall surfaces, are also dangers. Many hazards are obviated or decreased where mechanical mining is practiced. Roof movement is delayed by rapid extraction; concentration of workers permits closer supervision, and ventilation can be controlled more readily.

Curves

The data of the various mines have been plotted as curves on figures 1, 2, 3, 4, 5 and 6. They include, for comparative purposes, the information contained in Information Circulars 7223, 7178, 7067 and 7014, "Multiple-Shift Mechanical Mining in Some Bituminous Coal Mines."

Figure 1—As the thickness of the bed increases and approaches 8 ft. in mines where pillars are not extracted, the tons per loading-machine shift in-

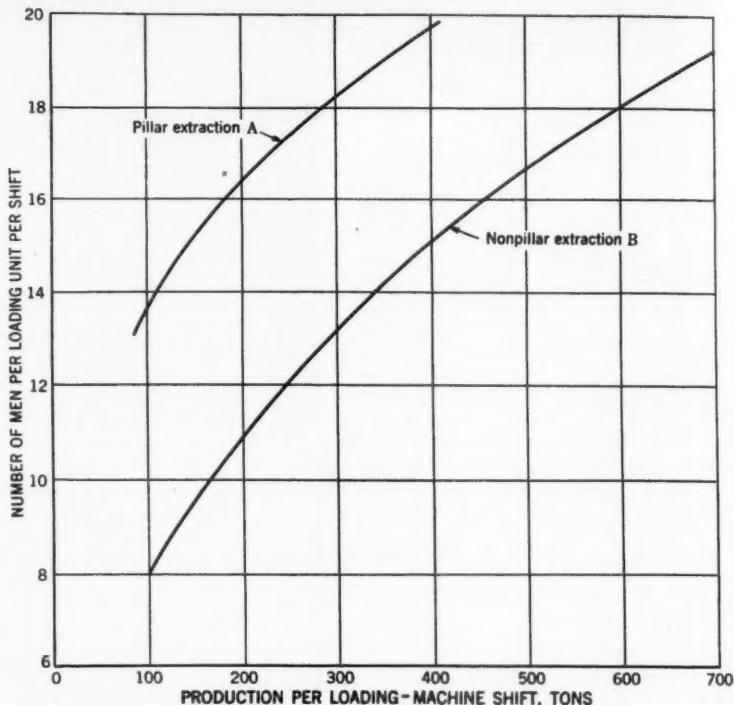


Fig. 3. Relation of number of men per loading-machine unit per shift to production per loading-machine-shift (tons)

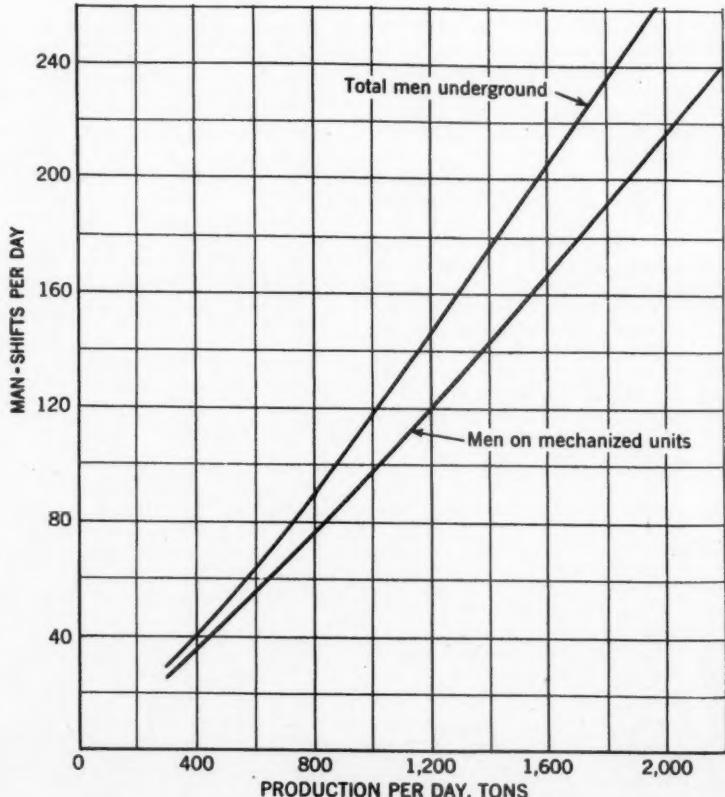


Fig. 4. Relation of man-shifts to production per day, conveyors

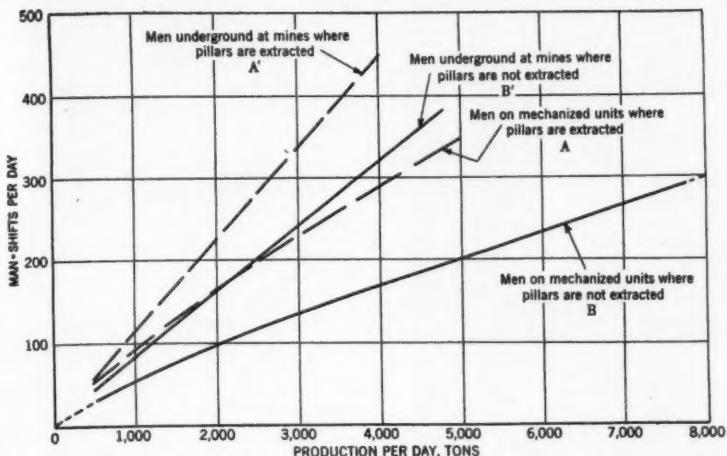


Fig. 5. Relation of man-shifts per day to production per day, mobile loading machines

crease at a more rapid rate than from 8 ft. to 12 ft. When the machine approaches its loading capacity, the effect of the thickness of the bed becomes less apparent. The curve of pillar extraction follows the general trend of the curve of nonextraction, but the production per machine shift is lower for all bed thicknesses. The bed thickness in the mines recorded in curve A does not attain that recorded in curve B. The loading machines of mines represented in curve B are approaching their rated capacity, but those of curve A are below capacity. Future investigations may include mines extracting pillars in bed thicknesses greater than 9 ft.

Figure 2—This figure gives the occupations of typical crews of pillar-extraction and nonpillar-extraction mines.

The curves in Figure 2 do not show occupations of the men comprising a loading-machine crew.

Figure 3—Curves A and B represent pillar extraction and nonpillar extraction, respectively. The curves have the same general characteristics. They vary chiefly in that more men are required per unit where pillar extraction is practiced.

Figure 4—This figure indicates that as the tonnage increases the number of men on mechanized units and underground increases at a uniform rate. The percentage of men at nonproductive work remains constant.

Figure 5—Curves A and B indicate that where pillars are extracted the man-shifts per day required on mechanized units increase more rapidly as production increases than where pillars are not extracted. In addition (see Fig. 3) total man shifts per day increase more rapidly in pillar work than in nonpillar work. The number of nonproductive men in both in-

stances remains approximately the same.

Figure 6—This figure indicates that for those mines reported in curve A the tons per man increase rapidly where the bed ranges from 28

to 45 in. in thickness. From that point tonnage remains virtually constant for greater thickness of bed. Use of conveyors in bed thicker than 50 in. does not increase loading efficiency. Curve B, mobile loading machines, indicates, by comparison with curve A, that where the bed is thicker than 50 in. it would be desirable to use mobile loading equipment, if physical conditions permit, rather than conveyors. The downward trend in curve B from 75 to 120 in. is caused by adverse conditions at the mines studied. Possibly future studies will tend to revise this curve to the approximate position of the dashed portion.

Acknowledgment

The information used in preparing this paper was obtained through the courtesy and cooperation of the officials of the companies whose mines are described. Consent of the executives to publish these data was obtained.

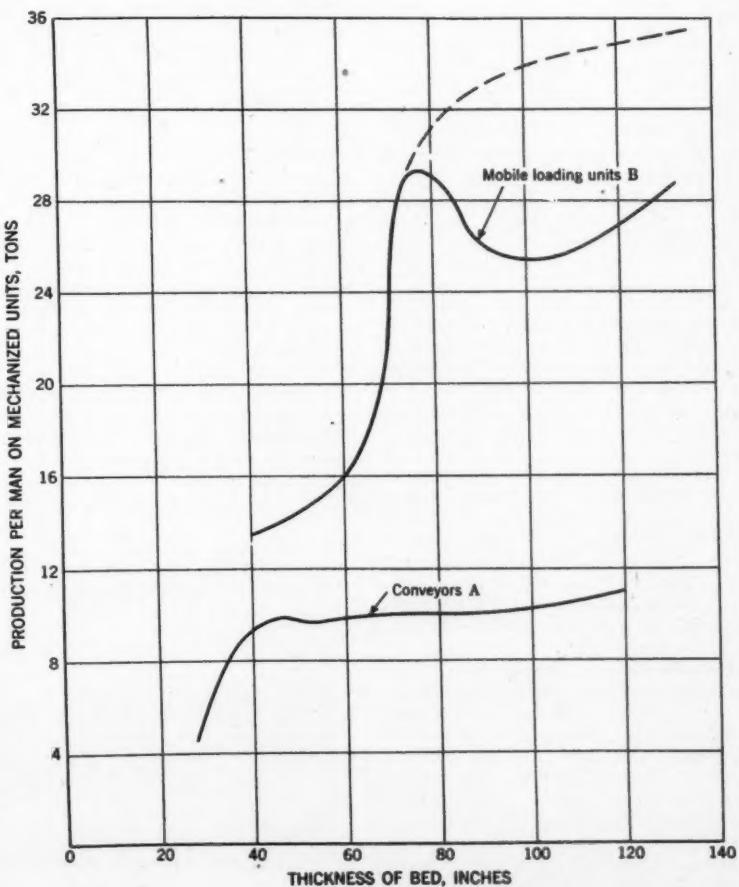


Fig. 6. Relation of bed thickness to production per man on mechanized unit (tons)



Headframe over the Prince shaft. Paul Gemmill, mining engineer and geologist on the left and David L. Gemmill, president and general manager

TWO MILES south of the modern flotation plant of the Combined Metals Reduction Company, Pioche, Nev., which was described in the April issue of THE MINING CONGRESS JOURNAL, is situated the Prince Mine of the Prince Consolidated Mining Company, where war-time production of zinc and lead is being increased through the use of both small and large air and electrically operated slushers. The company has no mill, and the ore is hauled over a standard gauge railway from the ore bins of the mine to the custom ore yard of Combined Metals. Current production is around 175 tons per day, virtually all of which is zinc-lead-sulphide ore. David L. Gemmill is president and manager.

The property was first exploited in the early '80's when fluxing ores were produced and hauled to small smelters then operating in the Pioche district. Some of this same ore was also shipped to smelters in Utah at that time. The principal metal found was lead, which occurred in rich pockets of oxidized iron-manganese ore. Development of the property was sporadic from 1900 on up to 1912. From 1915-1918 activity reached the peak, and the property was the leading lead producer in Nevada during the World War I period. Strong faultings similar to the type found at the Caselton mine, presented problems to the early day mining, but two ore bodies were exploited by gloryholing. Diamond drilling programs conducted at various times have located several horizons of

Nevada's leading producer of lead in the last war now supplies the war program with zinc

silver-zinc-lead ore, including an isolated bed of high-grade zinc ore. Paul Gemmill is mining engineer and geologist for the company.

Operations were suspended in 1923 when the vertical shaft reached 835 ft. and encountered considerable water. Up to that time a substantial tonnage of ore from limestone replacement deposits had been produced which contained around 15 percent manganese, 30 percent iron, 3 percent lead and about 3 oz. silver. The Prince Mine was the only one in the Pioche district where large quantities of oxidized manganese minerals had been found. Development of the limestone

replacement ore bodies by the Combined Metals Reduction Company on its property not far from the Prince Mine, has disclosed the presence of manganese in substantial quantities.

During 1926-27, a prospecting and development program was started in which 3,000 ft. of diamond drilling were completed and very carefully logged. Information from this work has proved extremely valuable in co-ordinating the company's plans of mining and development today. This drilling revealed an ore horizon not found elsewhere so far in the district. It consists of mineralization containing about 11 percent zinc but no



A general view of the buildings around the Prince shaft

lead, and it was found directly on top of the quartzite which contacts the Pioche shale. Drilling in the other parts of the district to this contact of shale and quartzite, and even beyond this quartzite bed, never has revealed a similar horizon of zinc. With the Prince shaft bottoming at 835 ft. below the surface, and this strong zinc mineralization found approximately 250 ft. below this point, shaft sinking to a horizon of about 1,100 ft. would be necessary to reach this zinc ore.

In September, 1941, the mine was rehabilitated and the first ore shipment was made to the Combined Metals mill. Boulder Dam power provides energy for all operations. Future plans involve increasing production to 250 tons per day as fast as mine development underground will permit. The electrical distribution on the 835-ft. level is provided by 3-25 KVA Westinghouse transformers reducing from 2,300 volts to 440 for a slusher operation and the driving of two Cuppens fans.

Some pumping is necessary and the equipment involved consists of a Wintroath deep well pump driven by a 2,300-volt GE 300-h.p. direct-connected motor. This is a turbine type pump, having a capacity of about 1,000 g.p.m. and with a head of 825 ft. This is used as a standby unit. A Byron Jackson 6-stage multiplex 300 g.p.m. pump, having a direct lift from the bottom of the shaft (825 ft.), is operated by a 2,300-volt 200-h.p. Fairbanks motor. This unit is a comparatively recent installation.

Slushers Are Used in Mining

Mining operations virtually follow the system employed at the Caselton Mine of the Combined Metals in the Pioche district. Locally the system has been christened "longwall and retreating and caving." Douglas J. Jackson is mine superintendent. The four sketches accompanying this article show in a general way the methods followed in ore removal.

In driving drifts and cross-cuts Ingersoll-Rand DA-30 hand-operated drifters are used, and when some stoping is necessary Sullivan S-91 stoppers are employed. Regular hexagonal steel is used for drilling and Atlas Gelodyne 45 percent powder for blasting. In some places, hand shoveling is required, but most of the ore is removed by the previously mentioned mining methods wherein slushers are used. Two Sullivan 10-h.p. electric double drum slushers are employed in ore removal as well as a new 250-lb. Ingersoll-Rand slusher, also two air-operated Sullivan and a large Ingersoll-Rand slusher. Roebling cables of $\frac{1}{8}$ in. and $\frac{1}{2}$ in. are used in the slushing operations. Scrapers used are of the hoe type 36

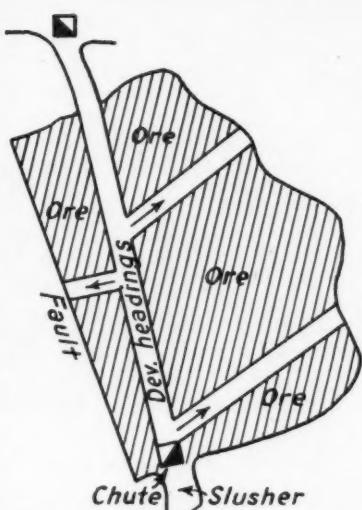


Fig. 1. Development ore bed for slusher operations

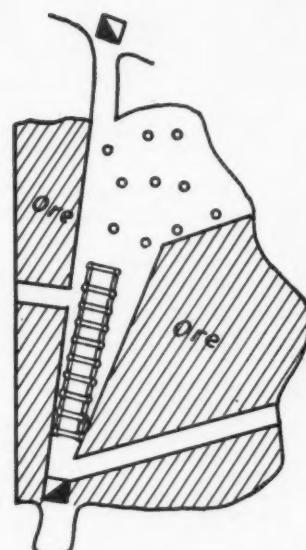


Fig. 2. Beginning of ore removal. Timbering is necessary for slusher haulway

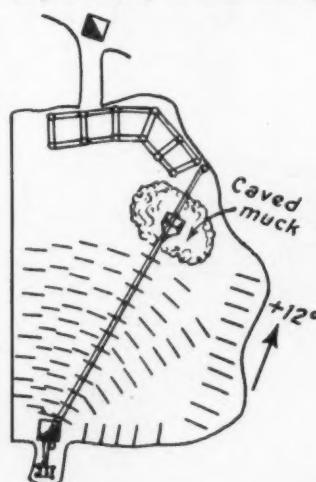


Fig. 3. A general sketch of timbering and slusher layout

in. by 2 ft. high. All necessary welding and other machine work is under the direction of William T. Quirk, master mechanic.

The ore beds dip generally about 12 degrees to the south, and the ore is brought into raises, bottomed with chutes where the ore is loaded into cars and hand trammed to the shaft, where they are hoisted on the cage to the surface and trammed a short distance to the ore bin. Haulage will soon be improved by the installation of a 3-ton GE storage battery locomotive. The track is of 24-in. gauge and 30-lb. rails are used.

Ore is hoisted by a Wellman-Seaver-Morgan double drum hoist which is powered by a 300-h.p. Westinghouse motor. The rope speed of the $\frac{1}{2}$ -in. Roebling cable is about 925 ft. per minute.

Compressed air is supplied by a Sullivan angle compound compressor of 375 cu. ft. capacity driven by a 75-h.p. Fairbanks motor and a 680-cu. ft. Ingersoll-Rand compressor, connected to a 150-h.p. GE V-belt drive motor.

The tight manpower situation at the mine was relieved in October somewhat by the order releasing sol-

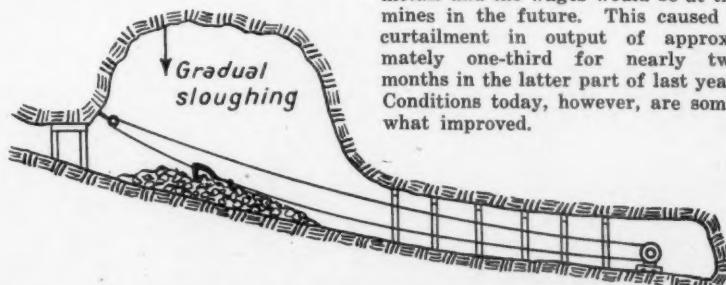


Fig. 4. Side view sketch of slusher operation

diers from the Army to work in the metal mines. When the manpower freezing order was announced last fall, many men left for defense plant jobs, not knowing what the price of metals and the wages would be at the mines in the future. This caused a curtailment in output of approximately one-third for nearly two months in the latter part of last year. Conditions today, however, are somewhat improved.

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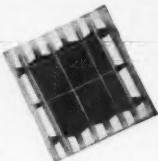
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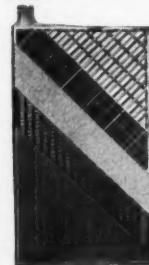
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(Lower right) Ordinary plate drying. Active material contracts unevenly and away from grid, cracking on surface, and leaving center impervious to liquid.



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Coal Division Reports

Service Haulage Mine Tie Study

Submitted to the Committee on Haulage Roads

By A. R. JOYCE*
C. C. HAGENBUCH

THE DETERMINATION of the value of the various kinds of mine ties used in service haulage tracks can only be made after factual data is developed covering the production of representative amounts of coal under normal working conditions for each mine studied.

No Conclusions Possible Without Complete Data

The 12 service haulage reports which were studied by the members of the Haulage Roads Committee in 1942 contain data so variable as to preclude their use in the form in which they were submitted. For example, one mine using the room and pillar system, reported after one year's operation that the steel mine ties used in rooms were charged off at the rate of 3.9 percent per panel unit. Steel mine ties are reported to have a use of 3.5 times for each panel unit. Since 300 single shifts, or one year, is required to mine out the coal in a panel unit, it is evident that the data furnished is inconclusive because with a depreciation per panel unit of 3.9 percent, it would take 25.6 years to completely use up the steel mine ties, which would have a service life of 89.6 uses. Obviously, with the limited time history available, this conclusion is not justified.

Another mine, using the block system of retreat mining, reported a 50 percent depreciation of steel mine ties per panel unit. There is no information available whereby the number of separate installations of steel ties on the pillar line and at the faces may be determined; neither do we have the length of time required to mine out the panel units.

* This was the last work which Mr. Joyce undertook for the Coal Division, and it is, therefore, published as a posthumous study. Mr. Joyce died April 7, 1943.

A Practical Method of Obtaining Data

We did find, however, that one mine which uses a room and pillar system of mining had furnished data based on operating records covering two one-year periods, and a sketch of a typical panel is shown with this report.

This mine is operating on the basis of 10 panel units being in production at all times. A physical inventory was made of all of the track material in all of the panel units at the beginning of the year. To this was added all of the panel unit track material that was sent into the mine during the year. From this total was deducted the physical inventory of all the track material remaining in the panel units at the end of the year. The quantities determined by this

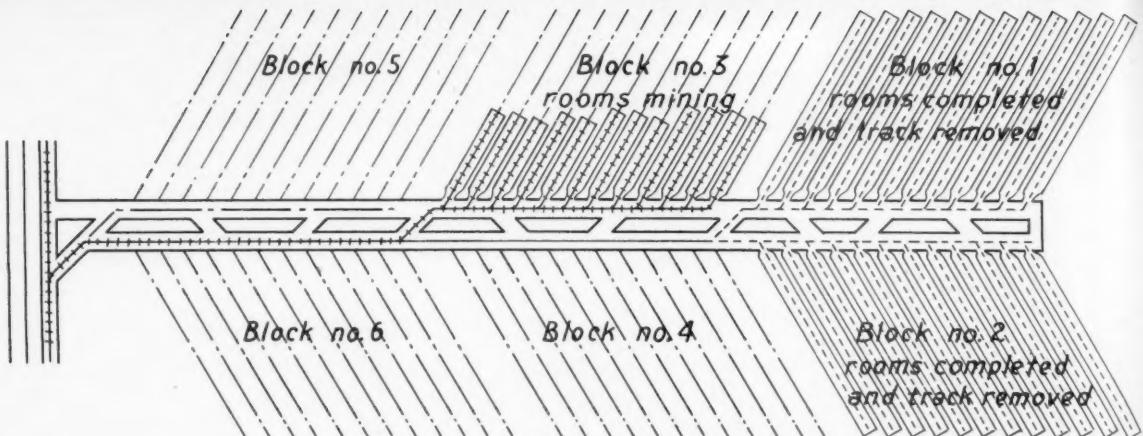
subtraction represent the panel unit track materials consumed in the mining operations. In the opinion of your committee, there is no other method of securing data that is satisfactory. This method obviously applies not only to room and pillar mines, but to mines using the block system.

Panel Unit Data

This mine works 18 full seven-hour shifts per week, and is 100 percent track-mounted loading-machine equipped, panel entries have 36 rooms on each side and produce 90,000 tons of coal throughout their life, which is approximately 3.5 months. The rooms are developed in the panel entries in sets of 12. Steel ties are used in the rooms, each steel tie being used in six different places in each panel unit. Steel-wood* ties are used in the

* The steel-wood tie referred to is a fabricated unit, consisting of a preformed wood base, pressure treated, on which a steel tie is bolted.





Sketch of typical mining panel where tie records are studied

entry tracks, each tie being used in two different places in each panel unit.

Steel Ties Used in Rooms

The steel room tie data is as follows for Mine No. 1:

Steel ties in rooms, 1,570; original value, \$1,086; charged off per panel, \$378; charged off per panel, 34.35 percent; panel lives, 2.9; times used, 17.4; months life per panel unit, 3.56.

A study of this mine made when it was a hand-loading operation showed that the steel ties had a life in rooms of 20.7 uses, which is a 19 percent increase in steel mine tie life, due to the difference in operating conditions between track-mounted loading machine methods and hand-loading methods.

Steel-wood Ties Used in Entry Tracks

The first steel-wood ties were installed in July, 1937. Based on five years' use of this material and the actual record of service in the track and the present condition of the material, it is conservatively estimated that these ties will have an average

life of at least six years. Therefore, the data for this type of tie is as follows:

Steel-wood ties, 1,244; original value, \$1,493; charged off per panel, \$73.70; charged off per panel, 4.95 percent; panel lives, 20.25; times used, 40.50; months life per panel unit, 3.56.

A summary of the work which these ties are doing might be made as follows:

10 percent per month. The operations were fully mechanized. Questioning this information an adjoining mine using a similar mining system is now in the process of developing physical inventory data. After the completion of three inventories, the management is already amazed at the amount of track material being currently consumed in the mining operations.

The committee recommends that

	Butt Lives	Times Used	Works Out
Steel ties—room track.....	2.9	17.40	17.40 rooms
Steel-wood ties—entry track.....	20.25	40.50	1,456 rooms

New Data Must Be Developed

The committee believes that the development of actual records based upon physical inventory of the track material used in working sections will result in making it possible to do better operating jobs. For example, a six months' study made at one mine using the block system of mining indicated a loss of steel ties and rails on the pillar lines of approximately

inventory records be instituted at representative coal mines in the various mining fields. This will make it possible to secure data which will form a yardstick by which the various types of steel mine ties, wood mine ties, and the fabricated steel-wood mine ties may be evaluated for use in service haulage tracks.

*Approved Dec. 1, 1942,
Committee on Haulage Roads.*

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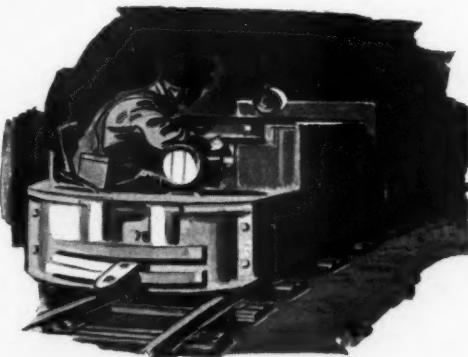
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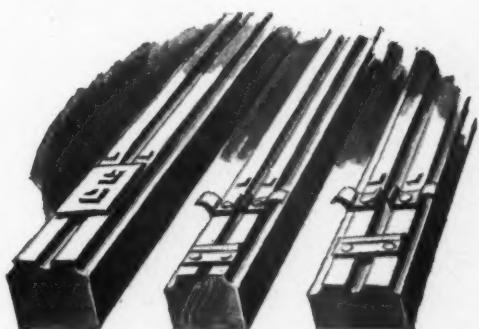
\$180,000 was spent in one year by a group of mines, taking top and bottom in thin seams to make room for conventional main-haulage track. Aside from the money, this work drained labor from badly needed production effort.



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Wheels of Government

As Viewed by A. W. Dickinson of the American Mining Congress

VERY LITTLE of a constructive nature from a legislative viewpoint has occurred in the past month to relieve the embarrassment of administration leaders in the House and Senate over the reversals on the withholding tax bill and the consequent log-jam involving a number of other important measures. Hope of an Easter recess for the Congress nearly glimmered out in the continued strife over the tax bill, foreign trade agreements authority extension, continuation of the powers over devaluation of the dollar and the \$2 billion stabilization fund, extension of the Guffey Coal Act and the struggle over farm prices. Additional battles loom over Treasury Secretary Morgenthau's proposal on post-war currency stabilization, the proposed National War Service Act, curbs upon organized labor and other controversial issues.

While the legislative pot boils the President is making a swing around the Army camps of the South and West, and surprised the country by an address delivered on April 19 at Monterrey, Mexico, upon the occasion of his greeting and felicitation of President Camacho and the Mexican people.

Tax Tilt

Strong minority party pressure in the House to discharge the Committee on Ways and Means by petition from further consideration of pay-as-you-go tax proposals has caused deep concern among Democratic leaders. Some observers indicate there is a real possibility that a 20 percent withholding tax and a slightly modified Rum plan could be swiftly passed and sent to the Senate by a coalition of the solid front of House Republicans plus a sufficient number of Democrats deeply chagrined at the handling of the tax bill up to the present time.

The \$210 billion debt limit bill, which carried a rider nullifying the executive order forbidding salaries of more than \$25,000 (after tax pay-



Washington Highlights

LOG JAM—Congress continues strife.

PRESIDENT ROOSEVELT—"Firesides" from Mexico.

PAY-AS-YOU-GO TAX—Be ready in ?

SALARY LIMIT REPEALER—Becomes Law Over White House Veto.

RE-NEGOTIATIONS—New Regulations in order.

TRADE TREATY POWER—Expires June 12.

MONETARY BILL—Dollar devaluation deleted.

WORLD CURRENCY DRAMA BEGINS—Enter "Unitas" and "Bancor."

MANPOWER—Farms gaining; mines losing.

COAL WAGES—Still negotiating.



ments), was allowed to become law without White House approval. The President immediately thereafter took occasion to severely criticize Congress for rescinding his salary limitation order, and stated that by attaching such a rider to an important financial measure the Congress had successfully and effectively circumvented his power of veto. The position of members of the House and Senate, as stated during debate on the bill, was that they were forced to use such tactics because the expressed will and intent of Congress had been disregarded and over-ridden by the executive order.

Rulings on Renegotiation

New regulations issued by the Price Adjustment Boards of the War, Navy and Treasury Departments and Maritime Commission state that the Board

and the contractors will agree on the amount of profits which exceed a fair margin. The following principles will determine what are excess profits: (1) that the stimulation of quantity production is of primary importance; (2) that reasonable profits will be determined with reference to the particular performance factors present, without limitation or restriction by any fixed formula with respect to rate of profit or otherwise; (3) that the profits of the contractor will be determined on his war business as a whole for a fiscal period; (4) that as volume increases the margin of profit should decrease; (5) that in determining what margin of profit is fair, consideration be given to the corresponding profit in pre-war base years of the particular contractor and for the industry; (6) that the reasonableness of profits be determined before the provision for Federal income and excess profits taxes, and (7) that a contractor's right to a reasonable profit and his need for working capital should be differentiated.

Contractors may submit financial and cost statements on new forms and thereafter be automatically absolved of any obligation to submit to renegotiation of their contracts unless requested to do so within one year after the filing. In the event one of the Boards calls upon the contractor for a review of his case or cases the fact that the Board has already had access to the basic figures will expedite procedure.

Trade Treaty Powers

Swinging into consideration of the Administration request for authority to extend the power to negotiate foreign trade agreements for another three years, the Ways and Means Committee heard Secretary of State Hull, Commerce Secretary Jesse Jones, Tariff Commission Vice Chairman Lynn R. Edminster, and Mr. Hull's special assistant Francis B. Sayre. The chief argument presented

by these witnesses stressed the necessity for extension of the trade agreement program as essential to the maintenance of peace in the post-war era.

Witnesses from many industries led by Dr. John Lee Coulter, formerly of the Tariff Commission, maintained that the power of the negotiators should be qualified, and Representative Gearhart, a Republican of California, indicated five amendments which should receive careful consideration: (1) that Congress be given some kind of veto power to set aside trade agreements of which it does not approve; (2) reduction of the period of extension from three to two or possibly one year; (3) adoption of language forbidding reductions in U. S. tariffs which would adversely affect either the American standard of living, farm parity prices or domestic wage levels; (4) require the U. S. Tariff Commission rather than the State Department to determine whether trade conditions justify tariff-adjusting agreements; and (5) a stipulation that the U. S. may not extend the most-favored-nation principle to any country which does not extend the same principle to the U. S. The trade agreement treaty power expires June 12.

World Currency Stabilization

Following the announcement that Treasury Secretary Morgenthau was discussing monetary plans to stabilize post-war economies, the Secretary appeared before Senate and House committees early in April and proposed the establishment of such a stabilization through the medium of an international currency bank, an international currency based on the gold standard to be known as "Unitas," and the advancing by the United States of sufficient gold, perhaps as much as \$5 billion, for the reserves of the bank. The Secretary stated that the proposal had been discussed with representatives of some 34 nations.

Lord Keynes, adviser to the Exchequer of Great Britain, has proposed a plan in which the international agency would function more like a clearing house and would conduct transactions between nations in terms of a currency unit to be called "Bancor." The British plan would fix the value of "Bancor," but not unalterably so, in terms of gold and would have the proposed currency accepted as the equivalent of gold. Lord Keynes makes the interesting remark that "gold still possesses great psychological value" and states further "the purpose of the clearing union is to supplant gold as a governing factor, but not to dispense with it."

Secretary Morgenthau stated that the primary objective of the fund

would be to remove obstacles to resumption of world trade by guaranteeing stable rates of exchange to private enterprise. The fund would be administered by a board of directors, including representation for each participating nation, which would fix rates at which the bank would buy and sell currencies of subscribing countries. No change of rates would be contemplated except to meet emergencies and such changes would only be authorized by a four-fifths vote of the Board, with maximum voting power retained by the United States.

With silver playing an increasingly important part in world affairs a number of Senators commented that the Secretary's proposals could be expanded to place the international currency on a gold and silver basis.

Monetary Bill

Quick Senate action followed the introduction of the Wagner-Somers measure to extend for two years the President's powers to devalue the dollar and continue the use of the \$2 billion stabilization fund. The Banking and Currency Committee reported the bill after deleting the dollar devaluation power and the Senate promptly passed it. In Chairman Andrew Somer's House Committee on Coinage, Weights and Measures Treasury Secretary Morgenthau did not ask for the restoration of the dollar devaluation power, but the Committee in reporting the bill—which was then passed by the House on April 21—inserted an amendment barring the use of any part of the \$2 billion fund in setting up the international currency bank advocated by the Secretary.

If the present power to devalue the dollar is allowed to expire the price of gold will automatically be frozen at \$35 per ounce. This removes the only real obstacle to carrying out the American Mining Congress' plan of January, 1939, to restore gold coins and gold certificates by legislation to free circulation among the people of the United States.

Manpower

The "hold the line" anti-inflation order issued by the President on April 8 is generally regarded as his answer to farm bloc pressure for increased prices and to wage demands, particularly those of the UMWA. The order gave to Economic Stabilization Director James F. Byrnes all the anti-inflation authority in the power of the President. Promptly the War Labor Board ordered its 12 regional boards to deny wage increases in 10,000 pending cases involving wage inequalities. This has led the CIO to drive the restoration of WLB's powers to grant wage increases.

Before the Military Affairs Committees of both the House and Senate, pressure continues for a National War Service Act along the lines of the Austin-Wadsworth bill. Testimony from ranking officials of the armed services and the Maritime Commission supports the drive for this type of legislation, although Manpower Commissioner McNutt still voices the hope that the situation can be met without compulsory action.

Recently there are serious losses of mining and other industrial manpower to the farms, the men apparently quitting in the belief that on the farm their position for military deferment will be more secure. A further serious cause of concern to mineral producers is the shortage of the meat and fats ration for the feeding of men who perform hard physical labor. This situation too is reported to be resulting in a loss of men from mining and logging operations.

Coal Wage Negotiations

Features of the wage negotiations thus far in April were the reports from operators to War Labor Board Chairman William H. Davis that they and the miners were in "complete and irreconcilable disagreement," and the demand, finally granted on April 22, that the dispute be certified by the Department of Labor to the WLB. The President's personal representative, Dr. John R. Steelman, and Secretary of Labor Perkins suggested that a guarantee of six days work per week for 52 weeks, or for the period of the new contract be taken as the basis of negotiations in place of the flat \$2 per day demand of the mine workers. UMWA President John L. Lewis immediately responded to this suggestion as contemplating an annual wage guarantee, but was met by the practical statement of the operators that working time depends upon the demand of coal, ability of transportation lines to get service to the mines, equipment breakdowns, absenteeism and many other factors.

On the portal-to-portal pay demand the representatives of the mine-managements explained to the President and to the country that hourly and tonnage rates of pay in bituminous coal mines have always been computed on the basis of the productive work performed, with full consideration given to a higher level of rates in order to compensate for the time spent in traveling to and from the usual working places.

In the case of the pending bituminous contract the extension of the negotiating period expires April 30. The contract under which the anthracite mines are now producing coal ends on April 30 but it is quite likely that in the latter case additional negotiating time can be arranged.



Standing cars should be immobilized

Information supplied by an Industrial Publication

Good safety practice requires that standing mine cars be effectively prevented from moving when they have been spotted at any desired point. This is particularly true with cars spotted at working faces.

One simple type of car stop has been developed by a mine that works very well. It is made from a length of $\frac{1}{4}$ inch chain, equipped with a hook at each end. The hooks are cast iron, about $1\frac{1}{2}$ inches in section, one hooking over the rim of the car,

and the other under the rail.

The use of chips or small pieces of wood, chunks of coal or rock, or similar makeshift blocks should not be tolerated. A position sprag, chain or block, depending on the type of car, should be used on all standing cars, regardless of the grade.

Whatever the device is, it should be simple, easily put in place, and effective. Above everything, the safety stops provided should be used, whenever the occasion demands them.

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FERROMOLYBDENUM • "CALCIUM MOLYBDATE"

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★ At 20 per, the old "can" ripped and snorted and the racket made you swear the speedometer was hay wire. But now, touch the throttle of the average car and its powerful, smooth running mechanism steps out at a mile a minute with no more noise than the quiet purr of the engine.

It's easy to misjudge the production of machines too, if you let noise and racket fool you. Take mechanical coal loading machines for example. Don't be fooled by unconsciously thinking that the one that makes the most racket will produce the most tonnage.

The Whaley "Automat"—with its exclusive shovel action; with its extra wide volume-conveyors, runs so smoothly and easily that it looks slow. But watch the cars behind it; watch the steady flow of coal at an average

rate of three tons per minute; check the tonnage on one, two, or three shift operations per day and you'll discover why operators who produce maximum tonnage at the least cost per ton depend upon the Whaley "Automat" to get that tonnage.

It's the smooth, easy, volume-production running of the "Automat" that saves wear and tear—holds maintenance to the minimum, and gives constant unbroken service. You can depend upon it!

Don't let noisy, racket-making machines fool you about production. It's the tons of coal per shift at lowest cost that counts. Watch the mines that use the Whaley "Automat."

Myers-Whaley Co., Knoxville, Tennessee



MYERS-WHALEY

Mechanical Loaders Exclusively For Over 35 Years

Cracking Hard Rock on "The Hill"

Mining Congress Journal will furnish readers, upon request, with official Government statements on any of these brief summarized announcements

COAL

W. Va. Beehive Coke Prices Adjusted. Office of Price Administration. Beehive oven furnace coke produced in three counties of West Virginia adjacent to and usually considered as being in the Connellsburg (Pa.) district, are to be priced under the same price regulation as that for beehive oven furnace coke produced in Pennsylvania, through Amendment 6 to RPS-77, effective April 6.

Coal Barge Weight Limit Extended. Office of Price Administration. To stimulate the maximum use of barges transporting coal from New York to New England OPA extended by 100 tons the cargo weight limit under which a maximum rate for transportation can be charged through Amendment 149 to Supplementary Regulation 14 of the GMPR, effective April 7.

Miners' Picks Rule Changed. War Production Board. WPB acted today to permit manufacture of coal miners' picks with "lip" eyes, instead of with "adze" eyes, following appeals from manufacturers who reported that "lip" eye pick was preferred by miners. Change made in Table 6, Appendix A, Schedule IV, of Limitation Order L-157, as amended.

Tests to Seek New Colloidal Coal-Oil Fuel. Department of the Interior. Exhaustive tests to develop fuel composed of mixture of oil and coal, for years goal of research chemists and engineers, have been started by U. S. Bureau of Mines and The Atlantic Refining Co., in industrial boiler of company at Philadelphia refinery.

Coal Cost Compilation Issued. Bituminous Coal Division. A revised compilation of cost reports from producers to the Bituminous Coal Division was made public March 27 showing only minor changes in the weighed average costs of producing coal during the 12-month period, October 1, 1941, through September, 1942, as shown in the preliminary compilation announced last February.

Form Committee to Draft Anthracite Program. Department of Interior. Formation of committee of 15 producers, wholesalers and retail dealers to draft and recommend wartime anthracite program is announced by Coordinator Ickes.

METAL

Calcium Metal Under Allocation Control. War Production Board. Calcium metal, a vital material for metallurgical uses, is placed under allocation by WPB through issuance April 1 of General Preference Order M-303.

Copper, Etc., Mine Royalties Frozen. Office of Price Administration. Royalties paid by domestic mine operators for copper, lead and zinc ores mined from leased properties are frozen at rates in effect on December 31, 1942, under Maximum Price Regulation 356 (Royalties on Copper, Lead and Zinc Ores), effective April 1.

Record Ore Movement Expected. War Production Board. Confidence that iron ore industry, lake vessel industry and railroad servicing industry will do all possible to meet quota of 95,000,000 tons for 1943 Great Lakes iron ore movement was expressed by WPB Chairman Nelson on April 9.

New Vanadium Source Found. Department of the Interior. Iron ore in New York State may provide Nation with additional supply of much needed vanadium for making war weapons as result of Bureau of Mines experiments showing that vanadium metal can be recovered from iron ore under certain conditions.

Zinc Dust Rule Continued. War Production Board. Continuance of zinc dust allocations after March 31 under provisions of General Preference Order M-11-1 was authorized on March 23 by WPB with issuance of amendment extending life of order.

Manganese Plant Approved. Department of the Interior. Bureau of Mines proposal to erect 400-ton-a-day custom mill at Butte, Mont., to treat manganese ores produced by several mines in that area has been approved by Facility Review Committee of WPB.

Lead Ingot Maximums Restored. Office of Price Administration. Maximum prices for ingots and linked ingots of primary lead that were reduced \$5 per ton by OPA effective January 20 this year were restored to their former level of \$10 per ton over the maximum price for pig lead through Amendment 4 to Revised Price Schedule 69 (Primary Lead) effective April 3.

EQUIPMENT

Industrial Diamond Use Studied. War Production Board. To insure effective use of industrial diamonds in war industries and to determine how their life may be prolonged is twofold purpose of scientific investigation by WPB Office of Production and Research.

Electric Motors Purchases Discussed. War Production Board. Plans for the scheduling of purchase orders for electric motors and generators were discussed in detail at a recent meeting in Washington of the Electric Motor Industry Advisory Committee with the WPB and other Government officials.

Emergency Purchases of Safety Shoes. Office of Price Administration. For the convenience of workers who need to buy "safety" shoes on short notice will authorize employers to issue purchase certificates for safety shoes to any employee who has spent his ration stamp 17. The provisions are contained in Amendment 7 to Ration Order 17, effective April 5.

GENERAL

Nelson Advocates Vacations for War Workers. War Production Board. Chairman Nelson issued a statement recommending granting of vacations to industrial workers this year as helpful to war production.

How to Protect Gardens From Animals Told. Department of the Interior. Victory Gardens can be protected from animal pests without necessity of destroying responsible animals, states Fish and Wildlife Service. Because so many Victory gardeners have sought information on methods of controlling cottontails and other animal pests, Service has prepared a mimeographed leaflet, "Protecting Victory Gardens From Animal Pests," available for free distribution.



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For sintering, nodulizing, calcining, desulphurizing and oxidizing and reducing roasting—also coolers, pre-coolers, preheaters, recuperators—and their accessories.

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NEW YORK, N. Y.

PERSONALS ..

Announcement has been made by the Sullivan Machinery Company of the resignation of John W. Haddock, as vice president in charge of engi-



neering and sales, effective April 30. Mr. Haddock, who has been with the Sullivan company since 1923, has been elected president of the Farrel-Birmingham Company, Inc., with headquarters at Ansonia, Conn.

Mr. Haddock has been active in the Manufacturers Division of the American Mining Congress and served as Chairman of the Board of Governors this past year. He has taken a leading part in the reorganization and building up of the Division which now includes in its membership over 100 of the principal manufacturers of mining machinery and equipment.

J. L. Perry, president of Carnegie-Illinois Steel Corporation, U. S. Steel subsidiary, has announced the appointment of Dr. Edgar C. Bain as vice president in charge of research and technology, effective April 1. The establishment of this new vice presidency is for the purpose of further intensifying these activities for the company's war effort.

Paul H. Nitze has been named acting chief of the Metals and Minerals Branch in the Board of Economic Warfare, succeeding Dr. Alan Bateman who will remain as associate chief of the branch. With the board since March, 1942, Nitze was formerly vice president of Dillon Read & Company. He has participated in Government missions to South American countries and was financial director of the Office of Coordinator of Inter-American Affairs before coming to BEW.

W. C. Page, Deputy Director of the Zinc Division of the War Production

Board, has completed his work with that division and on May 9, left to become associated with the United States Smelting Refining and Mining Company. Mr. Page became assistant to F. S. Mulock, vice president and general manager of Western operations of the company with headquarters in Salt Lake City. After being prominently identified with the mining industry of the United States and South America for a number of years, Mr. Page went to Europe in 1936 as general manager of the Trepcia Mines Ltd., of Yugoslavia. With the outbreak of the war he returned to United States and entered government work.

J. P. Williams, Jr., vice president of Eastern Gas and Fuel Associates, today announced that the board of trustees has elected L. C. Campbell of Pittsburgh, as vice president of Eastern Gas and Fuel Associates, Koppers Coal Division, succeeding P. C. Thomas, who died April 19. Mr.



Campbell thus takes charge of the largest independent bituminous coal mining operations in the United States. Mr. Campbell has been general manager of mines for Koppers Coal since February, 1941. He joined Koppers Coal in 1927 as general superintendent and was made assistant to the vice president in 1934.

Atlas Powder Company, Wilmington, Del., announced on February 10, the appointment of Ralph K. Gottshall, of Seattle, Wash., as Director of Sales of the Explosives Department, in full charge of the Sales Division and all its selling activities. Mr. Gottshall has been manager of the company's Northwestern district, with offices in Seattle. He will now be stationed in Wilmington.

At the same time, it was announced that William T. Mahood is appointed Manager of the Northwestern district, succeeding Mr. Gottshall.

Simon H. Ash has been appointed to supervise the OCD rescue service program according to an announcement by James M. Landis, Director of Civilian Defense. He will head the section of rescue services in the medical division of the U. S. Office of Civilian Defense.

Charles Koch, assistant mining engineer of the East Bear Ridge Colliery Company, has enlisted in the Seabees. He anticipates much surveying work in connection with various engineering projects. This is Mr. Koch's second contribution to his country's wars, since he was a private in the last conflict.

W. B. Jamison, formerly chief engineer of Jamison Coal and Coke Company, Greensburg, Pa., has been granted an indefinite leave of absence from his company and is now an ensign in the U. S. N. R., with address at 24 Hyde Hall, N. T. S., Bowdoin College, Brunswick, Me.

At the twenty-fifth annual meeting of the board of directors of the American Zinc Institute, held in New York on Thursday, April 15, all the present officers were reelected for the ensuing year: Howard I. Young, president; C. Merrill Chapin, Jr., vice president; James O. Elton, vice president; John A. Robinson, vice president; John L. Good, treasurer; Ernest V. Gent, secretary.

Raymond G. Irvine, chief of the legal staff of the Bituminous Coal Division for the enforcement of minimum coal prices since they were established on October 1, 1940, and in charge of enforcement of OPA maxi-



mum prices for the Coal Division, will return to the private practice of law on May 5, 1943, with the firm of Chadbourne, Wallace, Parke & Whiteside, 25 Broadway, New York City. During his service with the Coal Division he also participated in the proceedings which led to the establishment of the minimum prices and was active in exemption cases.

The following promotions, effective April 1, have been announced by the Oliver Iron Mining Company: S. R. Micka, former supervisor of production in the Hull-Rust mine, has been promoted to superintendent and John Chisholm, formerly assistant superintendent, has been made superintendent. J. E. Machamer, former assistant superintendent of the Hartley-Fraser mine, has been appointed superintendent and H. N. Pickering, former assistant superintendent of the Morris mine, has been made superintendent. E. E. Eidam, foreman at the Morris mine, is now assistant superintendent of the Godfrey, Morris and Leonart Burt mines. W. R. Welton has been appointed superintendent of all the company's mines in the Virginia district, and Ira O. Swanson has been appointed superintendent of all mines in Eveleth. J. A. Harrison, formerly foreman of the Hull-Rust pit, has been promoted to assistant superintendent of the Mountain Iron mine at Mountain Iron, Minn.

Nathaniel Arbiter, former research assistant at Columbia University, has been appointed to the staff of Battelle Memorial Institute, Columbus, Ohio, and assigned to its division of mineral dressing and materials beneficiation research.

Harvey S. Davidson of the Franklin Coal Mining Co., Powhatan, Ala., has been appointed vice president and general manager and **Charles P. Moore**, superintendent. These changes were announced by the company on March 1.

Announcement is made by Peerless Pump Division, Food Machinery Corporation, of the appointment of **Dan R. Rankin** as Acting Chief Engineer



of the company. Mr. Rankin has been associated with Peerless for the past five years and previously was assistant to the Chief Engineer.

C. R. English has been appointed general manager of operations for the Pacific Coast Coal Company, of Seattle, Wash., a major producer in the Northwest.

Matthew J. Hrebar has been appointed instructor in mining engineering at the Pennsylvania State College, State College, Pa. He brings to this position a wealth of experience gained in mechanized mines in West Virginia, Kentucky, and Pennsylvania.

Edward B. Morrow was recently elected vice president by the directors of Hercules Powder Company and Francis J. Kennerley named to succeed Mr. Morrow as treasurer of the chemical company.

— Obituaries —

P. C. Thomas, vice president of Eastern Gas and Fuel Associates in charge of operations of its Koppers Coal Division, died April 19, after an illness of several months of a heart ailment. He was 55.

Perry Critchley Thomas joined the Koppers Coal Company in 1928 as manager of mines and later became



vice president and general manager. He was named vice president in charge of coal operations when that company was made a division of Eastern Gas and Fuel Associates.

He entered the anthracite industry in early youth and was successively associated with the Temple Iron Company, of Scranton, Pa.; the H. C. Frick Coke Company, in Scottdale, Pa., in the engineering department; and the New River Company, in Mt. Hope, W. Va., as chief engineer, later superintendent and then general manager. In 1919 he had charge of opening the Helen (W. Va.) mine for the East Gulf Coal Company, and in 1926 he became general manager of the New River and Pocahontas Consolidated Coal Company, belonging to the Berwind-White Coal Mining Company.

Mr. Thomas was a member of the Duquesne Club, Pittsburgh Athletic Association, Seven Springs Club, Engineers Society of Western Pennsylvania; American Institute of Mining and Metallurgical Engineers. He was a former director of the American Mining Congress, a director of the First National Bank of Bluefield, W. Va., and a director of the New River Coal Operators Association.

A. Reamy Joyce passed away at Marietta, Ohio, on April 7, following a three weeks' illness from pneumonia, complicated by heart trouble. Interment services at Oak Grove Cemetery, Marietta, were attended by a large number of his friends.

Mr. Joyce was born in 1883 in Cincinnati. He attended the U. S. Naval Academy at Annapolis for 2½ years, when he was forced to resign on account of a heart condition, and sub-



sequently graduated from the University of Minnesota. He has long been connected with the wood preserving industry and for the past 10 years was district sales manager, Wood Preserving Division, Koppers Company, with headquarters at Marietta.

Edwin Patrick Ryan, 64, vice president and general manager of El Potosi Mining Company, Chihuahua, Mexico, died at El Paso, Tex., on March 13, 1943.

After a varied experience in the metal mines of Arizona and Sonora, Mexico, he became manager of El Cubo mine at Guanajuato, Mexico, and later a member of the firm of Ryan, Brennan and Carpenter, consulting mining engineers at Mexico City, following which he became manager of the Cusi Mining Company, at Cusihuiriachic, Mexico, which he left in 1924 to take over the management of El Potosi Mining Company, at Chihuahua, Mexico, a subsidiary of Howe Sound Company.

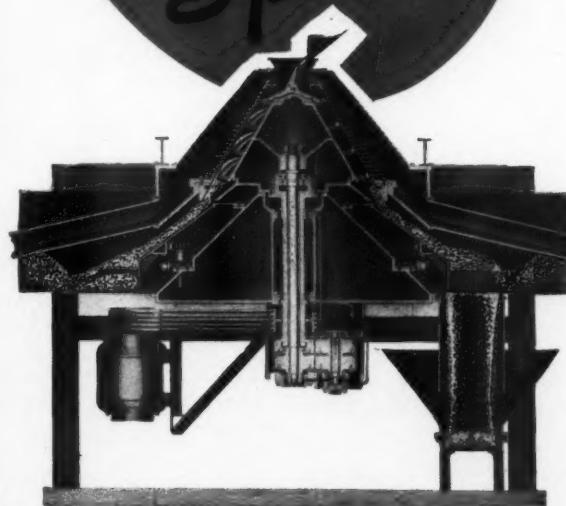
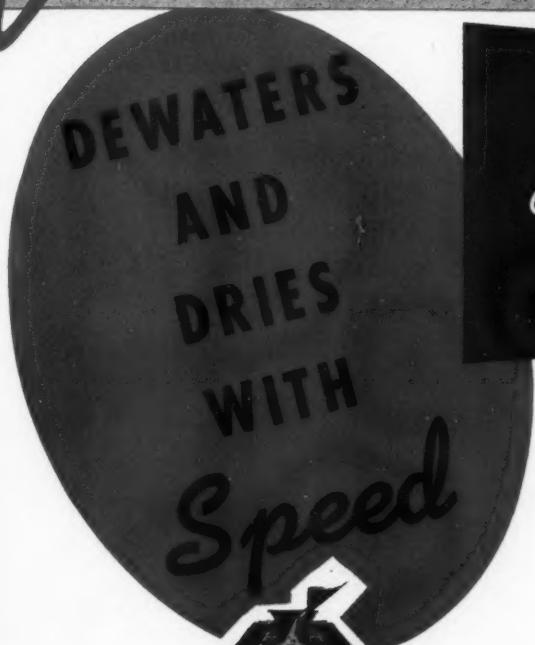
Julius W. Hegeler, 75, president of the Hegeler Zinc Co., Danville, Ill., and one of the best known and most highly respected men in the zinc industry died at Doctors Hospital, Washington, D. C., April 13, after a short illness. He went to Washington to attend one of the regular monthly meetings of the Zinc Producers Advisory Committee April 9 and developed pneumonia the following day.

Max W. Babb, 68, chairman of the board of the Allis-Chalmers Mfg. Company, one of the nation's largest builders of war and industrial machinery, died March 13 in Milwaukee after an illness of several weeks.

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Continuous Centrifugal
DRYER

★ Drying coal faster and uniformly speeds up coal deliveries. You secure increased tonnage and save waste.

The drying job is done so fully that you get no freezing of the coal in transit or in storage—the clogging of bins, spouts, and cars is eliminated. You save in installation space and in power.

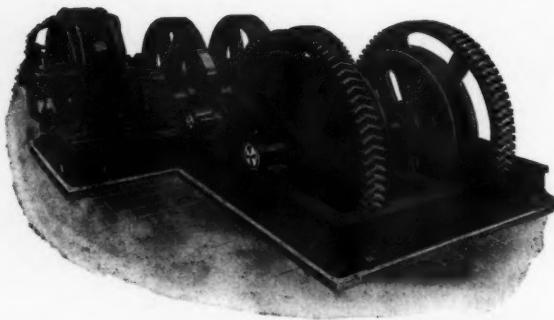
Sludge and slurry coals are easily reclaimed and used for special purposes or mixed with larger sizes when you use the "C-M-I" Continuous Centrifugal Dryer.

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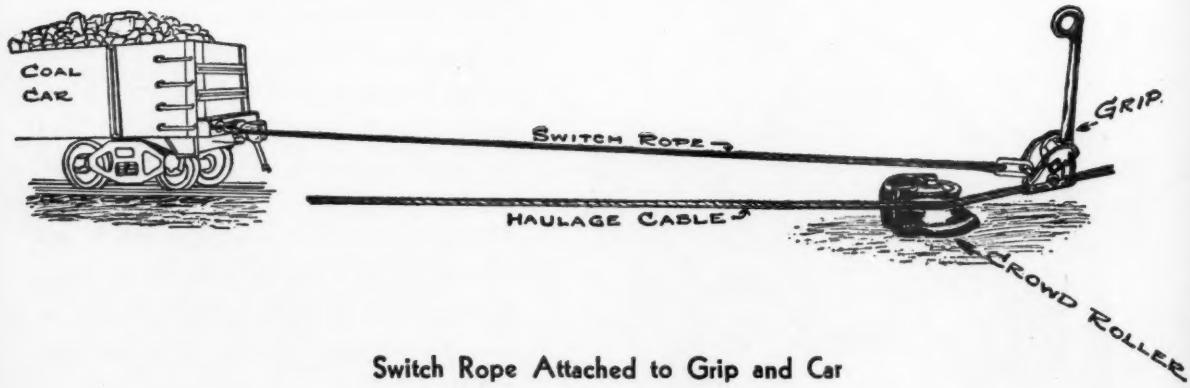
When you want them

Where you want them

*Without depending
on locomotives*

TODAY, LOCOMOTIVES ARE WORKING HARDER AND LONGER THAN EVER BEFORE AND AS A RESULT THEY ARE OFTEN NOT AVAILABLE WHEN YOU NEED THEM TO MOVE COAL CARS. WAITING TIME—IS COSTLY TIME—MOVE YOUR COAL CARS TO AND FROM THE TIPPLE WITH A HOLMES ENDLESS ROPE HAULAGE MACHINE. THEY CAN BE INSTALLED TO MOVE COAL CARS ON SEVERAL TRACKS AT THE SAME TIME AND IN EITHER DIRECTION.

HOLMES ENGINEERS WILL GLADLY HELP SOLVE YOUR MINING PROBLEMS.



Switch Rope Attached to Grip and Car

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DANVILLE, ILLINOIS

News and Views

Eastern



States

NEW HAMPSHIRE

» » » The Sargent mica mine, situated on a northern point of Unity Mountain, in the town of Claremont, Sullivan County, N. H., was studied and mapped in the fall of 1942 by A. H. McNair and J. B. Headley, Jr., of the Geological Survey, as a part of the Survey's investigation of strategic mineral deposits.

The mine is owned and operated by the Sargent Mining Co., Newport, N. H. Operations began in July, 1942. Development consists of an open crosscut of 63 ft. long, 10 to 15 ft. wide, and 25 ft. in maximum depth. The pegmatite body in which the deposit occurs trends northeast and has an exposed length of 1,700 ft.; the width of its outcrop is approximately 10 ft. at the northeast end and increases southwestward to 250 ft.

Oligoclase feldspar, quartz, and fine-grained graphic granite containing microcline-perthite constitutes the bulk of the rather poorly differentiated pegmatite. Small quantities of beryl occur near the margin of a mass of milky quartz. Muscovite of sheet quality occurs in a zone near, and in places adjacent to, the footwall and adjacent to inclusions of wall rock exposed in the east end of the open cut. The footwall zone is somewhat irregular, but all of it lies within 12 ft. of the contact. The books of muscovite are associated with oligoclase and quartz. Where exposed in the cut, this rich mica zone is separated from the contact by a few feet of pegmatite consisting mainly of oligoclase and quartz and containing only a little sheet mica. The sheet mica is mainly rum colored, and, although some is characterized by ruled and "A" structures and some is

"reeved," a relatively large proportion of high-quality sheet mica is being obtained.

CONNECTICUT

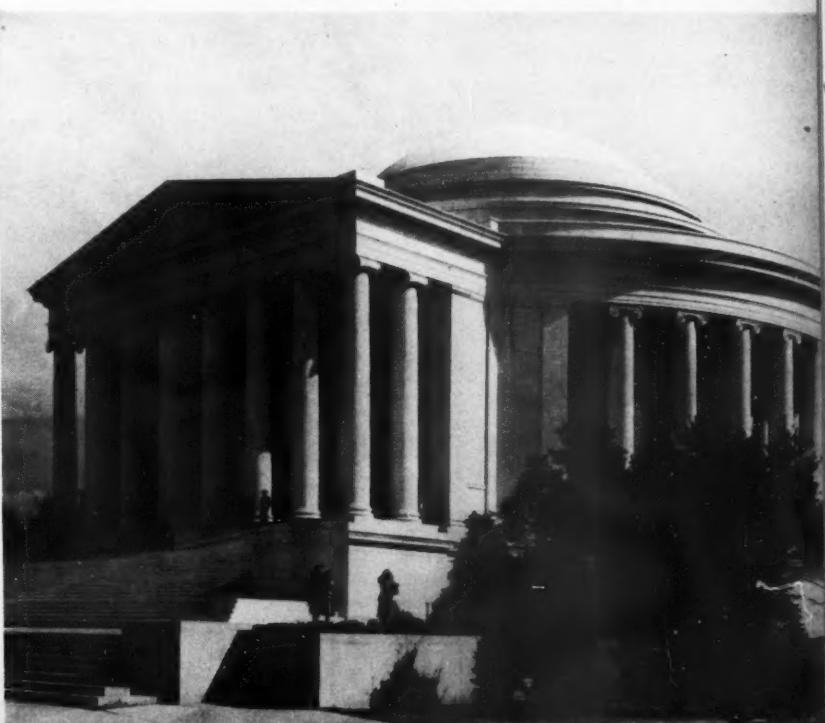
» » » The Strickland deposit, on Collins Hill, at Portland, Conn., has yielded feldspar for many years, and since 1930 it has been the chief producer of mica in Connecticut. Most of its output has come from the Strickland pegmatite, a sheet-like mass dipping steeply westward and enclosed in mica schists.

The Strickland mine, in the south-

ern part of the deposit, was opened before 1900. Since 1907 it has been leased and operated by the Eureka Mica Mining & Milling Co., of Portland. Feldspar has been its chief product, but since 1930 it has produced a large quantity of mica. The mine was closed down in 1937 but reopened in 1942. The Cramer mine, on the northward underground extension of the Strickland pegmatite, was opened by the Connecticut Mica & Mining Co. in 1934. It yields both mica and feldspar. The Strickland and Cramer workings together are about 600 ft. long, their average width is 120 ft., and their depth 120 to 160 ft.

Mica is found chiefly in certain layers parallel to the pegmatite walls. The principal layer, 2 to 9 ft. thick, lies beneath the west, or hanging wall. It has been traced northward from the middle of the Strickland mine for 500 ft., nearly to the north end of the Cramer mine. It has been fol-

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Tamping does not involve as much in manhours, equipment and maintenance in shooting preparation—but it is a very vital factor in controlling the shot—making placement and the powder more effective—bringing down more coal—resulting in lower shooting cost per ton.

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Leading distributors in every mining district have been appointed and carry a stock of tamping supplies. This allows for immediate delivery at all times to the mines in their territory. They also have men trained and well versed in servicing tamping equipment. For further details regarding SEALTITE products and service inquire of your local suppliers—or write us direct.

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THERE'S A SEALTITE TAM-
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SEALTITE

TAMPING BAGS

TAMPING BAG COMPANY

MOUNT VERNON, ILLINOIS

loured 140 ft. down the dip in places, and, although the upper limit of the layer has been reached, its extent in depth is unknown. In the Cramer mine a well-defined belt trending north-northwest has been especially productive.

NEW YORK

» » » The iron ore in New York State may provide the nation with an additional supply of much-needed vanadium for making war weapons as the result of Bureau of Mines experiments showing that vanadium metal can be recovered from the iron ore under certain conditions, according to Dr. R. R. Sayers, director of the Bureau.

Situated on the east side of Lake Sanford in Essex County, the iron deposit is being used in the production of ilmenite for the manufacture of paint pigment. Tailings from the ilmenite mill contain vanadium-bearing iron ore with high percentages of titanium oxide, a slag-forming substance which has made the ore difficult to use in blast furnaces, Dr. Sayers explained in referring to a report prepared by C. E. Wood, acting supervising engineer of the Blast Furnace Section of the Bureau of Mines, Professor T. L. Joseph, head of the Department of Metallurgy of the University of Minnesota, and S. S. Cole, Research Department, National Lead Company.

Because of the demand for vanadium for alloy steels, armor plate, and special tool steels, the War Production Board requested the Bureau of Mines, the University of Minnesota, and the National Lead Company, owner of the property, to investigate cooperatively the smelting methods for recovering vanadium from the tailings.

The vanadium-bearing material after sintering, was fed to a six-ton experimental blast furnace and an average of 87.3 per cent of the van-

dium was recovered in the pig iron produced. By controlling the amount of titanium oxide in the slag of the furnace to about 10 per cent, the technicians operated the furnace without difficulty, they said, but when the titanium oxide content increased the furnace did not operate as satisfactorily. Vanadium from the blast furnace is locked in pig iron, from which it can be removed by oxidation in a converter. The remaining pig iron can be utilized in making steel.

The Sanford Hill deposit is one of the largest beds of iron-bearing material east of the Lake Superior region and reportedly contains about 15,000,000 tons of ore. It is mined by open-pit methods. The ore has been used in blast furnaces at intermittent periods for more than a century for the production of pig iron.

In 1913, the Bureau of Mines made extensive investigations of titaniferous iron ore deposits in the United States and conducted many metallurgical tests. As a result, the Bureau advocated that both the Sanford deposit and another titaniferous deposit at Iron Mountain, Wyo., be developed. Ore from Iron Mountain, Wyo., is similar to the Sanford ore, but contains a higher percentage of titanium.

Other titaniferous iron ore deposits in the United States are in Rhode

Island, New Jersey, North Carolina, Minnesota and Colorado. The development of these ores has been held in abeyance principally because of the availability of iron which does not contain titanium and therefore can be utilized more economically in blast furnaces.

PENNSYLVANIA

» » » The Butler and No. 9 Collieries, operated during the past several years by the Volpe Coal Company, through a lease from the Pennsylvania Coal Company, have been acquired by the W. S. Jermyn Coal Mining interests. These properties, together with their No. 14 Colliery of the foregoing lessor, and the John Veith mine in the Southern Field represent a productive capacity of considerable size.

» » » Plans are being considered by the Gilbertson Coal Company for an addition to their breaker and Gilbertson. They involve a plant designed to pre-clean run-of-mine before it enters the existing breaker. Jigs, rolls, picking tables, conveyors, and feeders will be required.

» » » There is much activity in striping operations, especially in the southern area where the Philadelphia & Reading Coal & Iron Company

I-T-E and the Mining Field

Developments of the past ten years in mining methods have led to a very wide use of I-T-E air-immersed circuit breakers and switchgear. Consistent study of mining problems has kept I-T-E in the forefront with the result that I-T-E equipment has been a vital factor in mechanized practices.

Automatic Reclosing Circuit Breakers

I-T-E automatic reclosing circuit breakers with load measuring characteristics are widely used in mines where d-c trolley and feeder systems are employed and where overload peaks and faults arise frequently. Type KSA is for substation use in protecting semi-automatic or full automatic M-G sets, rotary converters and mercury-arc rectifiers. Type KSC is used in sectionalizing service to localize faults. Sectionalizing provides for maximum production at reduced cost for power, for electrical maintenance and machine repairs.

Fig. 1

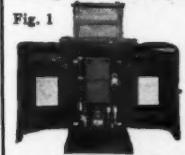


Fig. 1 (left) is a Type KSC automatic reclosing circuit breaker for sectionalizing service. Steel enclosure is open.

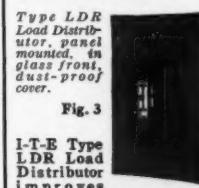


Fig. 2

Load Distributors

Type LDR Load Distributor, panel mounted, in glass front, dust-proof cover.

Fig. 3



I-T-E Type LDR Load Distributor improves service from two or more M-G sets or rotary converters in parallel on same system but widely separated. Generator loads are balanced to prevent over-heating, outages are reduced, peaks are limited and life of system and connected equipment prolonged.

Automatic Switchboards for Mines

I-T-E has designed and built many switchboards in recent years for semi-automatic or full-automatic protection and control in connection with local generating systems or purchased energy. The switchboards are for service with M-G sets, rotary converters and mercury-arc rectifiers. Much of the equipment, including circuit breakers and protective relays, has been designed specifically for mining service. Mounting is simplified and there is much flexibility in space arrangements. A typical installation is at right, above. (Fig. 4.)



Representatives in
Principal Mining Areas

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CIRCUIT BREAKER CO.
PHILADELPHIA, PA.

PETER F. LOFTUS Consulting Engineers

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Oliver Building Pittsburgh, Pa.

L. E. YOUNG Consulting Engineer

Mine Mechanization
Mine Management

Oliver Building Pittsburgh, Pa.

has made contracts for stripings at Pine Knob and Beechwood Collieries. The contractor for the latter project, Correale Construction Company, of Hazleton, has on order a Bucyrus shovel with a 25 cubic yard bucket which will be the largest shovel in the anthracite coal mining area.

» » » Much credit is due the Lehigh Navigation Coal Company, Inc., for the anthracite research work done during the past twenty years. Their latest activity is the construction of a pilot plant to make light-weight aggregate for concrete from slate (breaker refuse) produced at the Lansford breaker.

» » » A new coal cleaner has been developed by Peter Minicello, operator of the Morgan Colliery at Old Forge, Pa. It is designed to clean sizes buckwheat, rice and barley. The separation of slate from coal is accomplished in a launder equipped with sprays and slate trapping gates. Low installation costs, and a high recovery are claimed by those interested in the machine.

» » » Anthracite operators have opposed proposed legislation concerning surface subsidence due to coal mining, especially since it contemplates a tax of two cents per ton. A three-member subsidence commission to formulate a mine flushing program seems to be the practical way to solve this important problem.

» » » Victory gardeners will be interested in the advantages of anthracite coal as a soil conditioner. Research conducted by Anthracite Industries, Inc., shows that anthracite ash has five distinct advantages when applied to heavy soils. Anthracite as a filter medium is another non-heating application gaining favor in municipal filtering plants. Anthrafilt has increased filter capacity between 25 and 100 percent. The low ash and optimal particle size of anthrafilt meet the specifications of the filtering medium required in water filtering plants.

» » » An extensive mechanization program has been started at the Lytle Colliery near Minersville, Pa., by its new owners, the M. & S. Coal Company. A. J. Schroder, of Scranton, is directing the program which will include long belt conveyors, flight conveyors, and loading equipment.

» » » A slope, on the Oysterman track near Tremont, Pa., closed for the past thirty years is being reopened by the newly incorporated Joliett Coal Company. The incorporators are: Leo Harding, Bert McGrath and Charles Miller.

» » » Much construction work is under way by the Jeddo Highland Coal Company in connection with the

rehabilitation of the Locust Run and Merriam properties of the Lehigh Valley Coal Company in the Mt. Carmel area. Since they are near the Jeddo Highland Midvalley and Raven Run breakers, the necessary preparation facilities are available.

WEST VIRGINIA

» » » The annual short course in coal mining will begin at the Logan Senior High School on June 7 and continue to July 17. Classes will be held six days a week, but the class time has been reduced to five hours per day to permit students to work the evening shift of their regular jobs.

» » » Definite economy in ventilation costs, by freeing coal mines of gas before a seam is worked, is being accomplished by sinking pipes into the ground ahead of the workings and pumping the gas out, the Educational Committee of Compressed Air Institute, Cleveland, reports. This practice is said to be under way at a mining operation near Bluefield, W. Va., where holes for the pipes are drilled to depths ranging from 100 to 1,000 ft., depending upon the thickness of the overburden between the

coal and the surface. The pipes are set a short distance through the collar of the hole and then connected to blowers which exhaust the gas. Although the amount of inflammable methane must be kept to a maximum of 0.5 percent in the mine atmosphere, it is the aim of this new gas-evacuating process to reduce the amount of methane in the mine atmosphere 50 percent before the coal seam is opened.

» » » Consolidation Coal Company has transferred to the Bethlehem Steel Corporation certain coal acreage near Fairmont, W. Va. The estimated reserves of coal in this area is reported to be above 25,000,000 tons. Operations are now under way under the direction of officials of the Bethlehem Steel Corporation.

NORTH CAROLINA

» » » The first shipment of copper ore was made recently by the Chatham Copper Co., Inc., from their mining operations near Bear Creek, N. C. This new company has been in existence only a short time and operations are under way on a small scale. Officers of the company are C. C. Daugherty, Arthur Goodman, and Edward Dobkin of Charlotte, N. C.

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Surely such assurance is worth $\frac{1}{2}$ cent per ton. And for a plus-value, experience shows that a substantial increase in production has always resulted when COMPOUND-M was added to mine operating routine. The extra cost was more than offset by the extra tonnage per man, and per machine.

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MINING CONGRESS JOURNAL

74



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CZC

CHROMATED ZINC CHLORIDE

WOOD PRESERVATIVE

Central



States

MINNESOTA

» » » Butler Brothers, independent ore miners whose main office is at St. Paul, Minn., announce that the ore property recently leased from the Sargent Land Company and formerly known as the Sargent Reserve (NW-NE, Sec. 7, T. 57, R. 20) has been renamed the "Burrall Mine" in honor of Mr. Frederick P. Burrall of Marquette, Mich.

MISSOURI

» » » The old Crane mine, northwest of Joplin, Mo., has been dewatered by the Hopi Mining Company and zinc ore is being mined from the 180-ft. level. The ore is trucked to the Grasselli custom mill of the St. Louis Mining and Milling Co. About one-quarter of a mile northeast of the Crane mine, the company has resumed its shaft sinking operations on the Chenoweth land. A 10-in. drill hole has been sunk near the shaft site for the purpose of dewatering the area by means of a turbine pump. A short distance from the Crane mine lies the Powhatan mine which is also being dewatered.

KANSAS

» » » A new headframe and a 400-ton capacity wooden hopper was recently completed over the shaft of the old Oklahoma Interstate Cherokee Lease north of Trece, Kans., by Eagle Picher Mining and Smelting Company. Production of zinc ore has started on the 260 and 300-ft. levels. Ore will be hauled to the company's Central mill for treatment.

OKLAHOMA

» » » A large volume of water will be pumped from a flooded zinc-lead lease in northeastern Oklahoma by the Federal Bureau of Mines so that underground exploration and development can be undertaken. The acreage is known as the Park-Walton Lease in Ottawa County. Preparatory to installation of the pumps, a new access road has been constructed to the mine and an old road resurfaced. Power lines have been extended to the site for the operation of large turbine pumps.

Michigan

» » » In the annual report of the Cleveland-Cliffs Iron Co., for 1942, E. B. Greene, president, is quoted as follows concerning the company's iron mining operations on the Marquette iron range, Michigan, and the Mesabi range, Minnesota:

"Capital expenditures for new plant and equipment during the year amounted to \$966,967.11, and our 50 percent share of developing the Mather mine of the Negaunee Mine Co. was \$236,718.14, a total of \$1,203,685.25.

The development of the new Mather mine has progressed satisfactorily. The shaft was sunk to a depth of 2,350 ft. by the middle of January, 1943, and no further sinking operations are contemplated for the present. Development work on the 1,600-ft. and 1,750-ft. levels is going forward.

All surface buildings and construction on the property have been completed and it is hoped that the mine will be in the early stages of production in the last half of this year.

"The mines under the company's management on the Marquette range were operated to capacity throughout the year 1942, and the open pit mines on the Mesabi range were operated to capacity throughout the mining season. This capacity production is having the effect of shortening the estimated life of the mines. The company is conducting drilling operations outlining additional orebodies, to be developed as needed. Fortunately, the company owns in fee or holds under lease a substantial acreage of lands on the marquette iron ore mineral formation which should provide ore reserves for many years.

"Under the method of price control adopted in 1942 by the Office of Price Administration, the selling price of ore remained at 1940 levels. Costs, however, have gone up considerably, resulting in a lower margin of profit per ton of ore.

"We regret the necessity of reporting that the results of operations by Missouri-Cliffs Mining Company in 1942 were disappointing.

"The Coal Department during the year 1942 shipped 5,401,370 tons of

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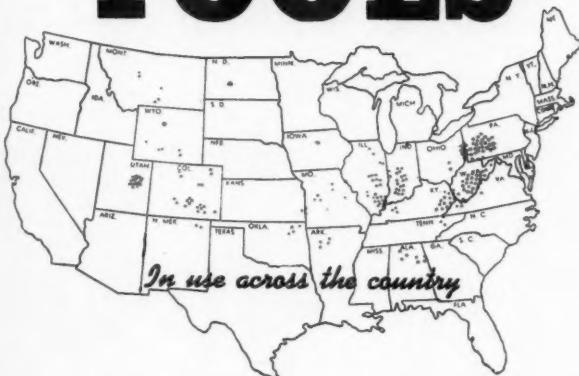
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TOOLS that add speed to COAL Production

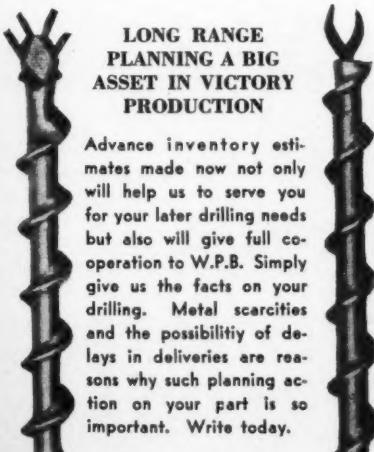


TOOLS



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Advance inventory estimates made now not only will help us to serve you for your later drilling needs but also will give full cooperation to W.P.B. Simply give us the facts on your drilling. Metal scarcities and the possibility of delays in deliveries are reasons why such planning action on your part is so important. Write today.



COALMASTER TOOLS certainly help out, particularly today when we are all producing for Victory. They drill straight holes in record time—drillers do not have to fuss and fight the equipment to get the work done.

There is accurate alignment of these tools from thread bar to tool point. That means COALMASTER TOOLS run smoothly and give workers time to relax while the drill does the work. The safety angle is one of the things that appeal to drillers. Mines are doing their fastest drilling since they standardized on COALMASTER. The coal is broken and chipped out, not pulverized.

COALMASTER TOOLS are made in types for hand-held drills—for post and machine mounted drills—for strip pit drills. Sizes are available for holes from $1\frac{1}{2}$ " to 16" dia. This is an organization of drilling specialists and we are prepared to work with you to your greatest advantage.

Our representatives will be glad to help you increase your coal production.

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CENTRAL MINE EQUIPMENT CO.
ST. LOUIS, MO.

coal, 3,630,148 tons by rail and 1,771,222 tons by lake vessels. The lake vessel tonnage was shipped either directly to customers or over docks operated by the company and its subsidiaries, located at Green Bay, Wis.; Duluth, Minn.; Port Huron and Escanaba, Mich."

ILLINOIS FLUORSPAR OUTPUT REACHED NEW HIGH IN 1942

DESPITE LABOR and other difficulties, production and shipments of fluorspar in 1942 were 8 and 12 percent greater than 1941, the previous record year, according to final 1942 figures made public in March by the Bureau of Mines.

Production of fluorspar in the United States totaled 337,000 short tons in 1942 against 313,000 tons in 1941. The Illinois-Kentucky district accounted for 79 per cent of the total in 1942 as compared with 86 per cent in 1941.

Shipments from mines in 1942, amounting to 360,316 short tons, were 12 per cent greater than in 1941 (the previous record year) and 37 per cent more than the 263,817 tons shipped in 1918 of World War I. Shipments from Illinois, New Mexico and Utah established new highs; those for Illinois



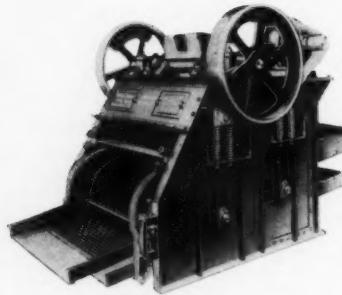
Main head frame, tipple and washing plant of a large coal mine in Illinois

(161,949 tons) exceeded by 3.4 per cent the previous high (156,676 tons) attained in 1917. The movement from Kentucky in 1942 was 6 per cent under the all-time record made in 1941. Shipments by river or river-rail (70,049 tons) also made a new record. Of the 1942 shipments, 63 per cent moved to steel plants (67 per cent in 1941), 24 per cent to hydrofluoric acid plants (16 per cent in 1941), 6 per cent to glass and enamel plants (10 per cent

in 1941), and 7 per cent to other industries, including exports (7 per cent also in 1941).

Steel mills, the Bureau reported, are the principal consumers of fluorspar, but much larger quantities were used in 1942 in the production of hydrofluoric acid, which is essential in the manufacture of artificial cryolite and aluminum fluoride, aluminum raw materials. The glass industry ranks third in importance as a consumer of fluor-

SOME UNITS AVAILABLE FOR PROMPT SHIPMENT ...with Proper Priority

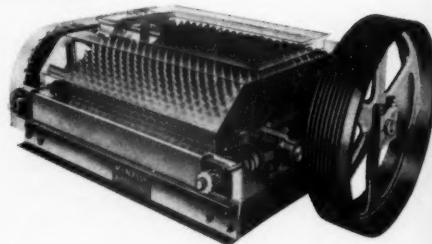


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This crusher has been designed to meet the requirements for crushing egg and nut sizes to 1 1/4", 1", or 3/4" with the lowest possible production of extreme fines. Made in three sizes: Heavy, Standard, and Light. (It is not difficult to obtain priorities on coal crushers.)

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For reducing lump coal to egg or nut sizes with far less production of fines than with any other known coal breaker. No grinding action takes place as the coal is pierced when the picks descend. Type B with shaking feed illustrated; also furnished in Type A with conveyor feed.



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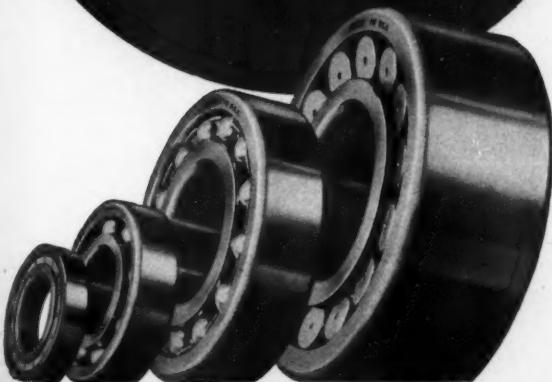
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Screening 1800 LBS. COAL IN 60 SEC. WITH SKF BEARINGS



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SKF
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BEARINGS



The War has brought many tough jobs to SKF-equipped machines. One of them is screening in less than 60 seconds 1800 lbs. of run-of-mine coal, dumped from the car in the tipple onto this 4' x 8' Model "B" Single Deck Screen. But it's another tough job made easy by the ability of rugged SKF's to withstand heavy dynamic and static loads and to compensate for shaft deflections, distortions or weave. When bearings stay on the job, so do the machines of which they are a part.

5213

SKF INDUSTRIES, INC., PHILA., PA.

spar but it used less than in 1941. The enamel industry, which formerly ranked fourth, dropped to sixth place in 1942.

Publication of foreign trade statistics was suspended beginning October 1, 1941, and as a result, import and export data for 1942 cannot be released.

» » » The Eimeo Corporation announces the establishment of an additional complete filtration laboratory in connection with their Chicago office, 111 West Washington St., Chicago, Ill. The filtration engineering staff has been enlarged and Mr. Paul Richter is in charge of the filtration equipment department replacing C. J. Peterson.

number of colliers have changed the picture. New England, which in 1939 received three-quarters of its bituminous coal by collier, is now receiving over half by rail, and even its traditionally small proportion of water-borne anthracite has been diverted to the railroads almost entirely. New York, which is more easily served by rail than is New England, now receives no collier deliveries from Hampton Roads; the boats sail directly to New England ports. Some of these, however, too

small to handle colliers, are served by barge from New York.

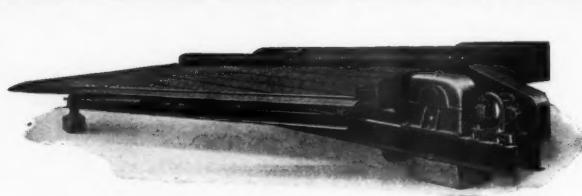
Elsewhere in the country, too, the coal transportation picture has undergone war-time changes. Eastern Kansas and western Missouri, which are in themselves coal-mining areas and usually self-sufficient, experienced a brief coal shortage during the past season. This was caused by a WPB order stopping the flow of natural gas into the region from adjoining areas unsupplied with coal. Emergency rail deliveries of coal had to be

The Coal Transportation Picture

DESPITE THE existence of local delivery shortages, transportation tie-ups have not cut off coal supplies, as occurred in the last war. Exclusive of supplies in the hands of individual consumers, 75,000,000 tons of bituminous coal—45 days' supply—are at present in storage at destination points throughout the country, anthracite being somewhat less generally available.

Although the railroads express certain fears of the increased coal transportation made necessary by the new six-day work week at the mines, where storage facilities are limited, they expect to be able to fill the 1943 industrial and domestic requirements for both bituminous and anthracite. These are 25,000,000 tons higher for bituminous alone than in 1942, due to increased conversion from oil, expansion of the steel and coke industries, increased demand for coal-generated power, and the general increased tempo of war industries. This 1943 coal demand represents an increase of 4 percent over 1942, but will entail a disproportionate increase of rail movement for delivery because of the great length of many hauls. Americans are being urged, both individual consumers and dealers, to take deliveries of coal during the spring and summer months: out-of-season delivery is the greatest factor permitting increased performance by a limited transportation system. There are no unused coal mines in the country at the present time, though in some cases manpower shortages make exploitation less than it might be.

Somewhat less than in the case of oil, but still to a striking extent, the railroads have assumed the major burden of coal deliveries to the Northeast. Increased industrial demand and the diversion and sinking of a



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Answer the nation's plea for increased strategic mineral production . . . by installing SuperDuty Diagonal Deck No. 6 Concentrating Tables for the most efficient treatment of your vital ore. Get maximum mineral yield . . . reduce wasteful middlings . . . minimize worthless tailings.

SuperDuty Tables are the choice of new mines and are replacing less efficient, more costly equipment in old mines because they increase ton capacity and afford greater recovery and more accurate cutting of concentrates. Even lowest grade ores are handled effectively and economically.

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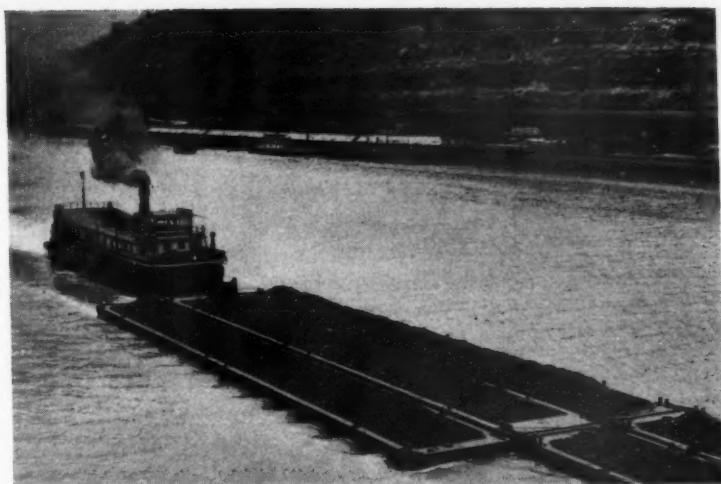


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made from fields in western Kentucky and Illinois.

Oregon and Washington, usually self-sufficient from Washington's own small fields, now suffer from a coal deficiency which in large part is due to manpower. The immensely expanding and well-paying shipyards in these states have drawn large numbers of men from lumbering and coal mining; the resultant fuel shortage, plus increased industrial demands and the tight oil situation, makes it necessary to bring in coal from Canada, Montana, Wyoming, and Utah. Appalachian coal, delivered by lake vessels to Duluth, is also transshipped westward by rail. Most of the coal going from Duluth to the Northwest is sent not in the usual open-top cars, which would have to return empty, but in poor-condition box cars, which bring back rough lumber for the East. On the other hand, to speed up delivery of vital Minnesota iron ore to Lake Erie ports for transshipment to the steel mills, the lake boats last season were frequently allowed to return to Duluth empty, thus cutting down usual coal deliveries by water. In each case it was the needs of war that dictated the operation.

Coal movements by barge have in-



Barges of coal moving on the Ohio River

creased throughout the country, especially in the Pittsburgh area and on the upper Missouri, but these still form only 5 percent of total coal deliveries.

New coal movements are constantly made necessary by the construction of war plants in new areas. A new blast furnace in Fontana, Calif., a new

aluminum plant in Phoenix, Ariz.—developments of this kind mean more and new deliveries of coal. It is hoped, though, that the general decrease in the construction of plants, airports and other Army and Navy buildings will free a considerable number of sand-and-gravel-carrying cars for coal traffic.

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Other Simplicity features are the special rubber corner supports, screen cloth in tension four ways over a doubly crowned screen deck, and sturdy all steel construction with each machine finished in every detail.

Simplicity Gyrating Screens are available in sizes from a 2' x 3' up to a 5' x 12' in single shaft assemblies; built in one, two, three, and four decks; as standard inclined types and also as low head types, where desired.

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States

CALIFORNIA

» » » California was the leading gold-producing state last year in spite of a 40 percent decrease in gold production from 1941, producing 851,000 fine ounces of recoverable gold in 1942, 557,793 oz. less than that of 1941, according to the U. S. Bureau of Mines. This decrease in 1942, compared with 1941, was larger than that suffered in any previous year in California history and was due largely to the promulgation on October 8 of War Production Limitation Order L-208, and to a lesser extent to rising expenses and severe shortages in both labor and materials on the West Coast. Despite these difficulties the Grass Valley-Nevada City district in Nevada County continued to be the principal source of gold, chiefly from gold lode-mining operations.

» » » California produced 1,403,000 fine ounces of silver in 1942, chiefly as a byproduct of gold mining; the output in 1941 was 2,154,188 ounces, a decrease of 751,188 ounces (35 per cent). The principal silver-producing center was the Mojave district in Kern County where the Cactus Mines Co. and the Golden Queen Mining Co. were leading producers. Other large operators were the Lava Cap Gold Mining Corporation, Empire Star Mines Co., Ltd., and the Idaho Maryland Mines Corporation, in the Grass Valley-Nevada City district, Nevada County, producing silver as a byproduct from gold ores; Shoshone Mines, Inc., Resting Springs district, Inyo County; and United States Vanadium Corporation (Pine Creek tungsten operation), in the Bishop Creek district, Inyo County.

OREGON

» » » On March 18 Secretary of the Interior Ickes announced that Albany, Ore., had been selected for the location of the Northwest electro-development laboratory where Bureau of Mines metallurgists will study the recovery and processing of minerals from the Pacific Northwest as part of a program to utilize this region's vast resources in winning the war. Negotiations have been completed for the purchase of the vacated buildings and grounds of the Lewis and Clark College, an institution that moved to Portland a few years ago, and the Bureau of Mines is converting the

property into a laboratory. Some experiments are expected to start as soon as the remodeling is completed and equipment and supplies are installed. Full operation, however, cannot begin until additional government funds are made available. The original appropriation of \$500,000 will take care of the purchase of the property and the conversion and installation of some equipment, but it provides no operating revenue.

The work planned to be undertaken is reported to be the investigation of improved methods of recovering magnesium and aluminum and research in the processing of nickel, tungsten, chromium, manganese, vanadium and other strategic and critical materials.

» » » The recoverable silver output of Oregon in 1942 was 80,000 ounces, a decrease of 196,158 ounces (71 per cent) from 1941, due largely to the suspension during 1941 of operations at the Cornucopia mine in Baker County and the Bellevue and Cougar Independence mines in Grant County. The total output for the state in 1942 was less than the 1941 output of Oregon's leading silver mine—the Oregon King in Jefferson County.

ARIZONA

» » » Silicosis and asbestosis, and 34 other occupational diseases, principally pertinent to mining, are now compensable under provisions of Arizona law enacted by the state legislature, and signed on March 6 by Gov. Sidney P. Osborn. Carrying an emergency clause, the law became immedi-

ately effective. All employers of three or more regularly employed workers must insure their employees; and total benefits cannot exceed, under various classifications, the amount of \$5,000. Penalties for employer noncompliance were created.

» » » Housing 392 mine war workers, Arizona's newest miners' dormitory and mess hall is now in operation at Miami. It was built of salvaged materials by the Federal Public Housing Authority. First to move in the new dormitory were 21 Navajo Indians. The mess hall intends to serve 36,000 meals a month to dormitory residents, habitants of trailer camps and townspeople. Each dormitory room is supplied with two beds, two chairs, a locker, and a desk.

» » » Activity in the Mayer mining district of Yavapai County is reported, as follows: Sinking operations are underway at the Hackberry mine, by Liberty Hill Gold Mines, Inc.; a crew of 22 men is employed, and copper, lead, and zinc ores are to be treated at the Golden Turkey mill at Cordes. The Liberty Hill Company's Boggs mine, an old property, is being rehabilitated. The property is a copper producer operating under an RFC loan. Six men are employed.

» » » Less bureaucratic influence in Washington from officials who, it was said, fail to completely understand Arizona's mining problems; higher prices, and better priorities, were chief among grievances aired on April 5, 6 and 7, before a sub-committee of the small business committee of the U. S. Senate, in Arizona to obtain information on how the government can aid the small miners.

In Tucson, southern Arizona small miners urged that a higher price be established for copper and other metals so that they can be produced without loss; and that established prices be guaranteed over a period of several years so that miners will not



Drilling the round in a small open pit chrome ore deposit in California

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Investigate the advantages of Pure Oil lubricants and service for the protection of vital mining machinery that must last the duration. One of our lubrication engineers will be glad to discuss your problems—without obligation.

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Call on A.B.C. for these ventilation essentials—NOW.

AMERICAN BRATTICE CLOTH CORP.
WARSAW INDIANA
JOBBERS AND AGENTIES IN ALL MINING CENTERS

be "squeezed" should the war end suddenly; and specifically asked relief from the pegged price of metals and the unpegged cost of production.

Particularly criticized, in Phoenix, was the method of paying for manganese. At present, the miners seek payment of \$1 per unit of 40 percent manganese; and they receive \$1 per unit for 48 percent and better.

In Phoenix, miners attending the hearing were assured by members of the sub-committee that no mine producing fluxing ores will be closed, even though it is a gold or silver producer; complaint having been made that some mines, particularly the Ash Peak property and Hardy mine, near Duncan, faced a closing threat.

A consistent government policy regarding stock piles and freight rates were asked by Charles F. Willis, secretary of the Arizona Small Mine Owner's Association. Some miners pay heavy penalties in freight rates where they operate in locations relatively inaccessible to stock piles, he said. With specific reference to manganese, he said that the government policy "blew hot and cold from day to day." He declared that "if the government wants manganese mined in this country, it should say so; and if it wants to buy it all abroad and let these miners work other types of properties, it should so indicate and let the (Arizona) miners get on with their work."

F. A. Bennett, Globe, voiced like criticism of the federal manganese policy. The same is true of asbestos, it was said by Roger Kyle, Globe.

The subcommittee heard miner grievances in seven categories—prices, marketing, financial, rationing, transportation, bureaucracy, and miscellaneous, in order to expedite their study. Members of the Congress present were Senator James J. Scrugham, Nevada; Senator James E. Murray, Montana; Senator Clayton D. Buck, Delaware; and Senator Charles Plumley, Vermont. Senator Ernest McFarland, Arizona, added to the committee, was unable to attend the Arizona hearings on account of illness.

UTAH

» » » Ores carrying a higher copper content, found on the 300 level, was the most encouraging development encountered in reopening the Bingham unit of the National Tunnel of Mines Company, it is indicated in the annual report of the company. Rehabilitation costs more than offset the operating income, resulting in a substantial loss for the year. Operating income was \$320,882, compared with operating expenses of \$953,361. The Rood shaft was cleaned out and rehabilitated for a depth of 1,100 ft. A total of 15,565 ft. of drifts and

crosscuts were cleaned out and a total of 6,697 ft. of new work was done. The mine operation was also hampered by an unbalanced crew, resulting from a shortage of men.

» » » Troubles of the small mine operator were aired at a hearing conducted in Salt Lake City on April 21 by Senator James Scrugham of Nevada, under the auspices of the Special Senate Committee investigating small business. Witnesses from intermountain states were in attendance and testified that taxes, rigid regulations of the Securities Act of 1933 and the Securities Exchange Act of 1934, the uncertainty of silver, and tariff regulations on metals had combined to stop the flow of capital into small mining ventures. Witnesses also complained against the numerous reports required by various bureaus and at the difficulty of obtaining prompt action on requests for equipment, particularly rubber for the men to wear in wet mines.

» » » Treatment of low grade tungsten concentrates was started in Utah for the first time early in April when the Salt Lake valley plant of the United States Vanadium Corporation began operations.

The plant is being operated by the corporation for the Metals Reserve Company and was erected at a cost of \$450,000. It covers a three-acre tract and will treat high-grade tungsten ores and low-grade concentrates originating in Western mines and

from other Western plants. The concentrate produced will be shipped to Eastern plants engaged in the manufacture of alloy steels.

A stockpile of tungsten concentrates has accumulated during the past several months as a result of shipments to the Salt Lake plant from the Yellow Pine mine of the Bradley Mining Company at Stibnite, Idaho; the Getchell mine north of Red House, Nev., and from Canadian mines. David D. Baker is operations superintendent.

Correction: In the March issue of MINING CONGRESS JOURNAL, page 67, there appeared a news item from Utah describing the drilling program of the Potash Company of America at Thompson, Utah. In the interest of accuracy we wish to make the following correction as pointed out to us by R. M. Magraw, general manager of the Potash Company of America, as follows: "First, the work is not being financed by the Defense Plant Corporation. Potash Company of America is alone responsible for financing this venture. Second, no plans for development of this area have been formulated by Potash Company of America, hence, the statement that it is planned to sink two shafts for underground mining is, at this time, very premature. Third, it is reported that the completed project will cost in the neighborhood of \$850,000. Potash Company of America has issued no such statement and any estimate of cost put forth at this time would also be premature."

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NO. 6688

NEVADA

» » » Manhattan Gold Dredging Company, operating near Manhattan, Nev., has been given permission by the War Production Board to resume operations for the period from March 24 to June 30, 1943. Senators Pat McCarran and J. G. Scrugham of Nevada pointed out to WPB the extreme hardship to the community resulting from the gold mine closing order L-208, and brought out the fact that operations would not require materials or manpower needed in the war effort. Thomas R. White, of San Francisco, came to Washington early in March to assist WPB in its consideration of the Manhattan Company's appeal. In authorizing limited operations, WPB imposed the condition that only one shift of 11 men be used and that none of these men be essential to the war effort.

IDAHO

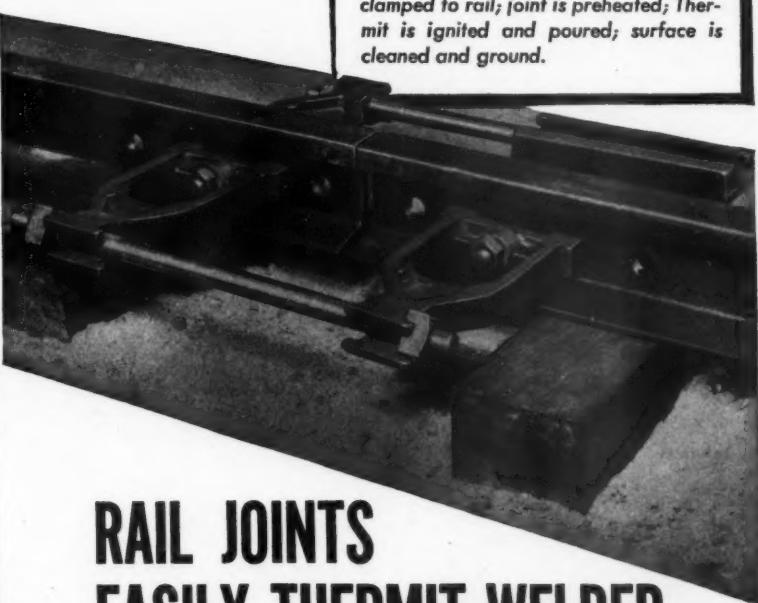
» » » Eight big mining companies of the Coeur d'Alene District, Bunker Hill, Hecla, Sullivan, Federal, Sunshine, Polaris, Sherman and Tammarack, purchased \$5,715,564 worth of war bonds and other government securities during the year 1942, according to the official annual reports made to stockholders. In addition, the same eight companies paid the county, state and national governments \$4,674,545 in taxes of all kinds.

These large sums are only a small portion of the cash benefits accruing to the public from mining operations in this district. Arthur Campbell, state mine inspector, estimates that 7,000 men are employed in the mines of the district and that more than 50,000 other persons are directly or indirectly connected with and dependent on the mining industry for a livelihood.

Wages in the district are the highest ever paid in the history of mining, as follows:

Miners	\$8.25
Shovelers	7.75
Blacksmiths	9.00
Timbermen	8.75
Blacksmith helper	8.00
Timber helper	8.00
Electricians	9.00
Machinists	9.00
Flotation operator	8.50
Machinist helper	8.00
Mill repairman	8.50
Carmen, trammers	7.75
Mill repairman helper	8.00
Motormen (main line)	8.50
Carpenters and painters	9.00
Motormen helpers	8.00
Main hoistmen	9.50
Small hoistmen	8.75
Nippers	8.25
Shaftmen	9.25
Pump and compressormen	8.50
Surface laborers	7.50
Ore sorters	7.50
Cagers	8.50
Trackmen	8.25
Shift bosses	9.75

Shows rail ends lined up and clamped: one step in a critical-material-saving Thermit weld. Molds are then rammed and clamped to rail; joint is preheated; Thermit is ignited and poured; surface is cleaned and ground.



RAIL JOINTS EASILY THERMIT WELDED By Your Own Crew!

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Power losses at joints are eliminated, since a Thermit welded joint has the same conductivity as the rail itself.

"Continuous Rail for Main Haulage Track" describes completely the many advantages of Thermit welded rail joints. Write for a copy today.

VICTORY NOTE: Huge demands for Thermit for war uses prevent us from always filling orders promptly. Anticipating your needs as far in advance as possible will help us meet your requirements.

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Manufacturers Forum

Eye Protection

A practical means of combining convenient, non-fogging eye protection with the M.S.A. Skullgard's proved head safety is now available in the M.S.A. Skullgard-Eyeshield.



states the manufacturer, Mine Safety Appliances Company, Pittsburgh, Pa.

The M.S.A. Eyeshield, designed to deflect hazardous flying particles, may be quickly and easily attached to any Skullgard already in use, it is stated. A practical, easy-to-use device, the Eyeshield is always conveniently and instantly available for service at all times on the job. Affording full vision and utmost comfort, the transparent, plastic shield is so hinged that it is readily positioned before the eyes in proper facial curvature by a downward flip, and when not in use lies flat against the brim. The Eyeshield remains firmly in place in either position.

The M.S.A. Eyeshield may be ordered with all types of M.S.A. Skullgards and Comfo Caps, or may be ordered separately for attachment to those hats and caps already in service.

Robin Announces Change of Name

Robins Conveying Belt Co., Passaic, N. J., designers, manufacturers and erectors of materials handling machinery, announces that it is shortening its name to Robins Conveyors Incorporated. The new name is more truly definitive of the scope of its products which range from idlers, pulleys, pillow blocks and other elements of conveyor systems to bridges, towers, car dumpers, vibrating screens, foundry shakeouts, grab buckets, cable railways, ore bedding sys-

tems, and other large machinery for handling, stocking and reclaiming coal, coke, ore, minerals, sand, gravel and other bulk materials. Thomas Matchett, president of the corporation, informs us that no change of management, personnel or corporate structure is involved in this change, which is one of name only.

New Size 2 Linestarter

For machine tools, pumps, fans and similar machines, a new Size 2 Class 11-200 linestarter requiring less than half the mounting space of former units without sacrifice of wiring space is announced by Westinghouse Electric and Manufacturing Company, East Pittsburgh, Pa.

This compact unit designed for group mountings, built-in applications or remote mountings has a new clapper-type armature with knife-edge bearings. It utilizes double-break sil-



ver to silver contacts, thus eliminating shunts and reducing maintenance. Overload relays are reset either by hand or automatically. On applications requiring sequence or auxiliary interlocking, provision is made on the Size 2 linestarter for a total of four normally open or normally closed electrical interlocks.

All parts of the new unit are accessible from the front and all control circuit terminals and interlock terminals are clearly marked for easy installation and repair.

Waterproofing and Coloring Concrete Surfaces

A new product which needs no priming or undercoat and is a finish coat in color for masonry is announced by

Colorthru of 20 West 45th Street, New York, N. Y. One coat brushed or sprayed on floors and walls is said to penetrate, waterproof, preserve and beautify concrete, brick, stucco, cement, etc., whether inside or outside, painted or unpainted and can be applied to old or new masonry even when wet.

No priming is reported necessary thereby effecting a 50 percent saving in labor which usually figures 80 percent of total cost of a paint job. One gallon ready mixed for immediate use covers 400 sq. ft.

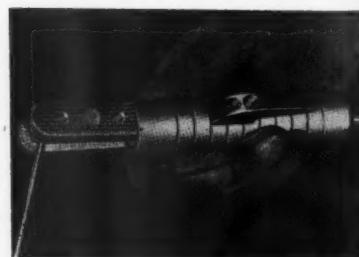
Portable Car Spotter

Announcement is made by Link-Belt Company, 2410 West 18th Street, Chicago, that the Link-Belt line of motorized electric car spotters, heretofore furnished only for stationary mounting, is now available also in portable form. The spotter is said to be so balanced on a channel iron frame that one man can lift the one end and roll the unit to any desired location.

The operator need but anchor the frame with a chain, as illustrated; plug electric cord into nearest power outlet; hook one end of haulage cable to car or object to be moved; wrap the other end around capstan; turn on the motor; and feed away the cable while the machine does the actual pulling.

Electrode Holder

A light, slender, easily handled arc welding electrode holder designed especially for welding operations around mines has been introduced by Jackson Products, Detroit, Mich. The

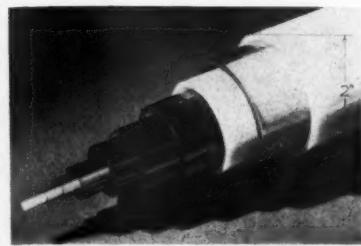


holder—Model F-1—is made of special high conductivity copper alloy, has a rated capacity of 200 amps., takes rods from the smallest to $\frac{3}{16}$ in. and has an overall length of 7 $\frac{7}{8}$ in., weighs 12 oz. and has mechanical or solder cable connection. Insulated, it protects the welder's eyes against flash

and eliminates work spoilage that ordinarily results when a bare type holder contacts the work. Its light weight and slim proportions enable the welder to manipulate it easily in tight places.

Plastic Tubing

To meet the expanding demands of war industry, Extruded Plastics, Inc., Norwalk, Conn., announce "TULOX" TT seamless plastic tubing is now available in all diameters up to 2 in.



O.D. Within a short time the range will be increased to 2½ in. O.D., to meet requirements of war production.

Extruded from Tennessee Eastman cellulose acetate butyrate, this tubing is available from warehouse stocks throughout the country through Crane Company, Chicago, and Julius Blum & Company, Inc., New York City.

Instruction Films on Fabrication of Aluminum

A new series of instruction films on the fabrication of aluminum has been released by the U. S. Bureau of Mines. Produced in cooperation with a large industrial concern, the films are in 16-mm. sound and they describe and depict by action shots and animation the fundamental techniques of the various operations of machining, riveting, and welding aluminum.

The titles of the three films are "Machining Aluminum," "Riveting Aluminum," and "Welding Aluminum." Copies are available for exhibition by industrial defense training classes, training courses conducted by or on behalf of the Army, Navy and Maritime Service, schools, churches, colleges, civic and business organizations, and other similar groups.

Application for loan of the films should be addressed to the Bureau of Mines, Division of Information, Central Experiment Station, 4800 Forbes Street, Pittsburgh, Pa., and should state specifically that the borrower is equipped to show sound films. No charge is made for use of the films, but the exhibitor is expected to pay transportation charges and for loss or damage other than normal wear.

Electrode Tournaweld RW

Tournaweld RW (roller-weld), especially developed for use in building up track rollers, rails and other similar parts of machines subjected to a combination of impacts and heavy bearing wear, is being introduced by R. G. Le Tourneau, Inc., Peoria, Ill.

This new electrode is characterized by rapid burn-off, smooth operation and uniform deposit of highly alloyed, tough, hard surfacing metal which is sufficiently soft in the as-deposited condition to be ground according to the best practice employed in rebuilding track rollers. It operates with greatest efficiency on reverse polarity with a d.c. welding machine. The rod is black in color and comes 14 in. long, in diameters of $\frac{5}{32}$, $\frac{3}{16}$ and $\frac{1}{4}$ in.

Drum Carrier

New 14-in. lift model Ernst Carrier with built-in brake for placing and removing 55-gallon drums on and off skids, scales and platforms, has been announced by Ernst Carrier Sales Company, 1456 Jefferson Avenue, Buffalo, N. Y.

The built-in brake provides smooth, slower and easier lowering of the container from the top 14-in. position. To raise the container a full 14 inches off the floor, just lower the handle from the up position to the horizontal position where the handle



automatically locks. By unlocking the handle and applying the brake, the container is lowered to the floor. One man takes the place of several formerly required to move and raise drums. The carrier operator does not even have to touch the container. Ruptures, broken bones and similar drum handling hazards and accidents are eliminated.

CATALOGS AND BULLETINS

AIR-LINE LUBRICATOR. *Ingersoll-Rand Co.*, 11 Broadway, New York, N. Y. Form 2815 describes and illustrates features of the manufacturer's Type F air-line lubricator for rock drills. 8 pp.

ARC WELDING ACCESSORIES FOR WOMEN. *General Electric Co.*, Schenectady, N. Y. GEA-3295 describes and illustrates the company's complete line of safety clothing and equipment especially designed for women. 12 pp.

FUEL AND LUBRICANTS FOR TRUCKS. *Standard Oil Co. (Indiana)*, Chicago, Ill. The company has issued Engineering Bulletin TB-92 for the instruction of proper lubrication of trucks and buses. The contents deal with power drives and axle suspension, brakes and braking system, motor fuel, motor oil, chassis and gear lubricants and a timely chapter on preventive maintenance. 111 pp.

MATERIALS HANDLING MACHINERY. *Robins Conveying Belt Co.*, Passaic, N. J. Bulletin No. 121 describes and illustrates the manufacturer's line of materials handling equipment. The Robins Mead-Morrison machinery and equipment for handling coal, ore and other bulk materials is well illustrated. Special rigs, grab buckets, car dumpers, cable railways are also described in this attractive brochure. 26 pp.

PHOTOELECTRIC RELAYS. *General Electric Co.*, Schenectady, N. Y. Bulletin GEA-1755E describes and illustrates the manufacturer's line of "Electric Eye" control for various industrial applications. 4 pp.

POWER TRANSFORMERS FOR MERCURY-ARC RECTIFIERS. *General Electric Co.*, Schenectady, N. Y. Bulletin GEA-3883 describes and illustrates interior and exterior construction details of two mercury-arc rectifier transformers which are typical of sizes both above and below 1,000 kw. The operations of these transformers is also described. 4 pp.

ROCK DRILLS. *Ingersoll-Rand Co.*, 11 Broadway, New York, N. Y. Form 2721 describes and illustrates features of the manufacturer's line of drifters for mining and tunnel driving. 16 pp.

TRUCKS, TRAILERS, CASTERS. *Rose Mfg. Co.*, 12400 Strathmoor, Detroit, Mich. In this loose-leaf wire binding bulletin are photographs and descriptions of the manufacturer's line of heavy-duty wagon-type trucks, two-way dump hopper mine cars and parts for many types of trucks. 18 pp.

SYNCHRONOUS-MOTOR CONTROL. *General Electric Co.*, Schenectady, N. Y. Bulletin GEA-1724D explains the primary as well as the additional functions performed by various synchronous motor controls made by the manufacturer. Starting, accelerating, synchronizing, and undervoltage protection as performed by both the magnetic and semi-magnetic types of full and reduced voltage synchronous motor controls are described in detail. 12 pp.

TRANSFORMERS. *General Electric Co.*, Schenectady, N. Y. Bulletin GEA-897-J describes the features and applications of the manufacturer's dry-type transformers for industrial uses. Photographs, outlines, dimensions and tables of specifications of the various unit-types are described. 20 pp.

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During the first twelve months of this war more than $1\frac{1}{2}$ million men were killed or injured by industrial accidents. That tremendous loss in productive time and needed man-power undoubtedly prevented the quick winning of several battles. Indeed, according to the National Safety Council, the lost-time through accidents could have supplied war equipment for 110,000 soldiers, sailors or marines. *And the shame of it all is that many of these accidents were needless.*

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peculiar operating features:

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- oil load carrying bearings are antifriction type and run in an oil tight case
- independent control of 1, 2, 3 and 4 rope drums with high and low speed
on each
- electric control
- sheet over-all length (topper 64 inches) for effective cutting in close posting
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